

**RCS**<sup>®</sup>  
AUDIO-SYSTEMS

GUARDIAN FOR YOUR BUILDING:



CATALOGUE **2018-19**

***Dear business friend,***

this is our latest and brand new general catalog and presents different areas from ELECTROACOUSTICS to PRO SOUND- and MOBILE SOUND SYSTEMS. Furthermore you will find the complete program for emergency warning systems and voice alarm systems (RCS-VARES®), certified to the applicable standards EN 54-4, EN 54-16, EN 54-24, IEC 50849 and DIN VDE 0833-4 in this catalogue.

The foundation of all this is located with our successfully researched and developed products labeled with „Made in Germany“. This set, especially in the digital field, new standards.

As a matter of course our qualified employees will assist you with any queries via telephone, fax or email at any time. You can count on our reliability, expertise and service..

***Enjoy and with best regards!***



Mitglied der  
Leistungsgemeinschaft  
Beschallungstechnik  
im ZVEI-Fachverband  
Sicherheitssysteme

**ZVEI:**

TÜV certified ISO 9001:2008  
TÜV certified DIN 14675:2012



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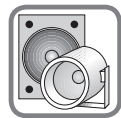
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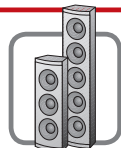
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VOICE EVACUATION SPEAKER

VOICE EVACUATION SYSTEMS

EMERGENCY POWER SUPPLY



## CERTIFIED SECURITY ACCORDING TO EN 54

FOR RCS VOICE EVACUATION SYSTEMS AND THEIR COMPONENTS



Voice Alarming-Speaker



The two RCS voice alarm systems VARES-1000® or VARES-3000® are the ideal solution for evacuation and announcements, communication and background music in public buildings, such as department stores, government agencies, recreational facilities, industrial and educational buildings.

### COMPLETE VOICE EVACUATION SYSTEM

#### EN 54-16 Voice Evacuation System (VAS)



A VA-system is complete if it is connected to the fire detection system.

The requirements for planning, construction and operation of a voice evacuation system describes the application of DIN VDE 0833-4. The demand on the equipment is prescribed in the product norm EN 54-16.

Since April, 1st. 2011 voice evacuation systems must be tested and certified to EN 54-16.

The testing of the products and the examination of the manufacturing plant guarantees a high product quality.

### VOICE EVACUATION SPEAKER

#### EN 54-24 Voice Alarm Speaker for a Voice Evacuation System (VAS)



The EN 54-24 describes the requirements for loudspeakers of a voice evacuation system. These loudspeakers must be tested and certified by a notified product certification authority.

This certification includes testing of the products (long-term stability, acoustical values) and examination of the manufacturing plant.

We produce these speakers in our own production line in Germany and we meet all of the certification criteria.

### EMERGENCY POWER SUPPLY

#### EN 54-4 Emergency Power Supply for a Voice Evacuation System (VAS)



The third essential product norm for voice evacuation system is EN-54-4

This refers to the emergency power supply of the VA and additional controlling of the accumulators stability.

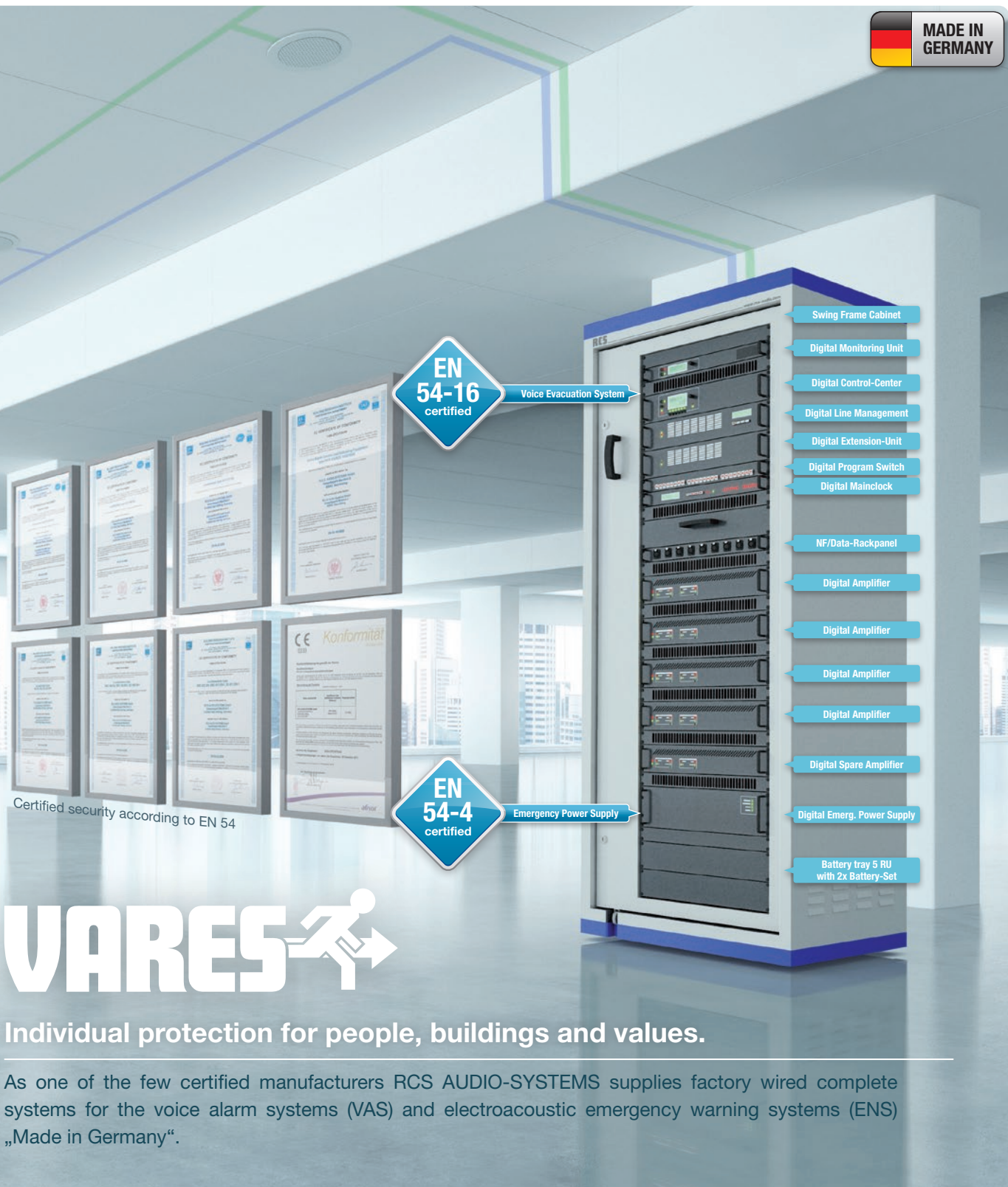


TÜV certified ISO 9001:2008



Mitglied der Leistungsgemeinschaft Beschallungstechnik im ZVEI-Fachverband Sicherheitssysteme

ZVEI



- Swing Frame Cabinet
- Digital Monitoring Unit
- Digital Control-Center
- Digital Line Management
- Digital Extension-Unit
- Digital Program Switch
- Digital Mainclock
- NF/Data-Rackpanel
- Digital Amplifier
- Digital Amplifier
- Digital Amplifier
- Digital Amplifier
- Digital Spare Amplifier
- Digital Emerg. Power Supply
- Battery tray 5 RU with 2x Battery-Set

EN 54-16 certified

Voice Evacuation System

EN 54-4 certified

Emergency Power Supply

Certified security according to EN 54

# VARES

Individual protection for people, buildings and values.

As one of the few certified manufacturers RCS AUDIO-SYSTEMS supplies factory wired complete systems for the voice alarm systems (VAS) and electroacoustic emergency warning systems (ENS) „Made in Germany“.

efficient ✓	full digital ✓	secure ✓	qualitative ✓
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## SAFETY CONCEPT FOR EMERGENCY SITUATIONS

DIRECT COMMUNICATION BETWEEN EMPLOYEES AND EXPOSED PERSONS



Intercom systems make it possible to communicate with the permanently occupied post and receive instructions in the event of an emergency.

**Events such as rampages, as well as attacks on people in schools and public buildings, make it clear that the use of emergency and danger response systems (NGRS) can minimize risks.**

In connection with a voice alarm (VAS), an emergency and danger response system provides substantial added value.

In addition to the security-relevant, fast and point-specific alerting in an emergency, a single system fulfills many important functions of everyday life. For example, the clock controls, the school gong, announcements or the sound of auditorium and sports halls.

### DIN VDE 0827

The standard **DIN VDE 0827**, which has been in force since 1 July 2016, addresses precisely this issue. In particular, to protect all persons in the building, Part 2 of the standard mentions requirements for emergency and danger-control intercoms (NGS) in public buildings, e.g. schools, universities, government agencies and similar institutions. These are used to transmit emergency and danger reports to a pre-designated service provider. These are used to transmit emergency and danger reports to a relevant emergency service.

### The Advantage of Emergency and Danger Intercoms (NGS):

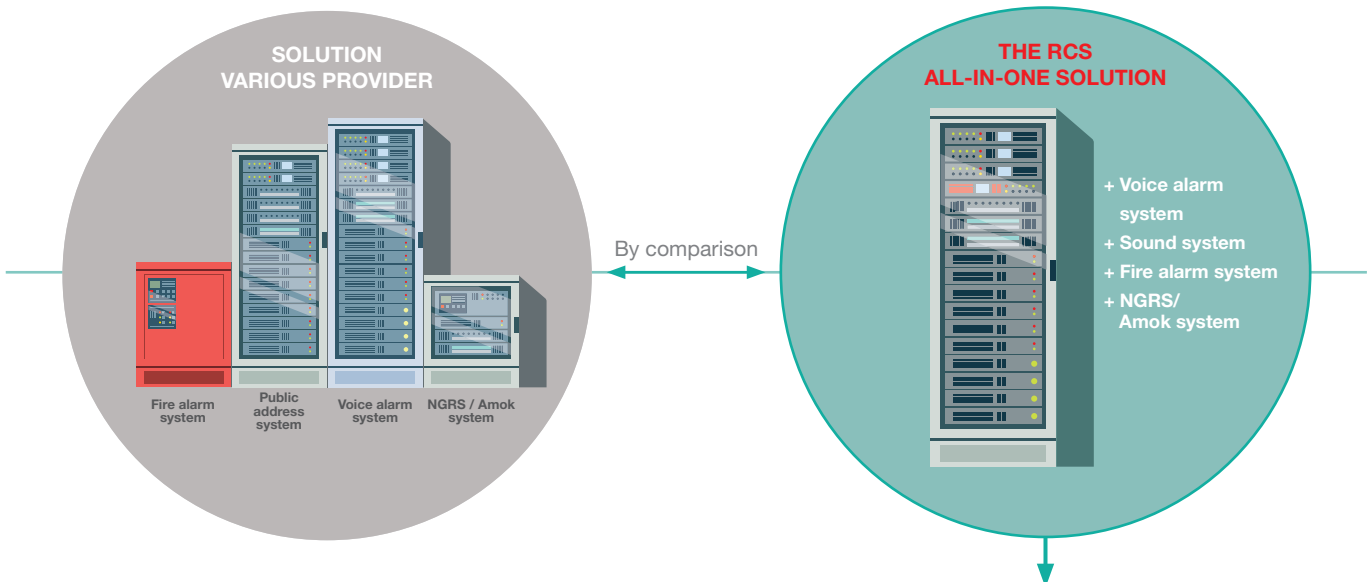
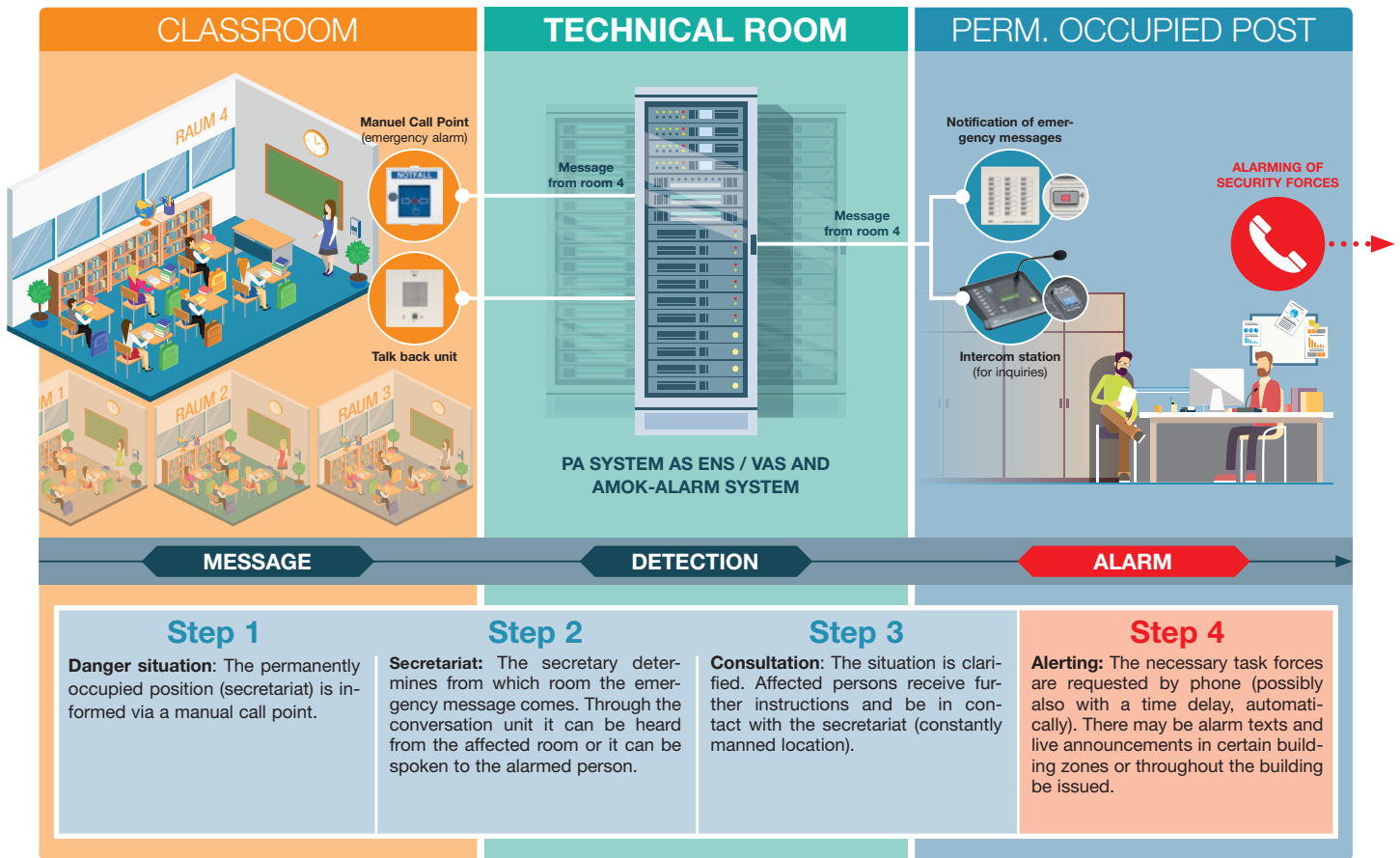
In contrast to visual or acoustic alarms, an intercom system can be used to remotely evaluate the situation by voice communication and thus initiate appropriate intervention, protection and rescue operations. It can, for example, communicate directly from the classroom to the secretariat or defined emergency personnel. The intervention forces can then use a NGS to selectively provide directions to different building zones or rooms and exclude parts of the building from announcements so as not to inadvertently warn potential offenders of police intervention.

»It can be e.g. communicated directly from the classroom to the secretariat or defined emergency personnel without calling the entire building through a group call ... «

Especially in complex dangerous situations, such as a possible rampage it represents, the VAS is far superior to a siren-based alarm system.

# LIVE SAVING VOICE EVACUATION

EMERGENCY AND DANGERS - REACTIONS SYSTEMS (NGRS)



## THE RCS ALL-IN-ONE SOLUTION ENABLES ...

### ... IN CASE OF EMERGENCY:

- + Alarm and emergency call
- + Speech dialogue with the control center or the emergency services - also in groups
- + Queries and discrete "listening in" in case of alarm
- + Triggering individual or automatic voice announcements

### ... EVERYDAY: (in connection with a VAS)

- + Announcement and call system
- + Fire alarm system
- + Clock systems and pause signal management
- + Sound system of auditorium, sports and gyms
- + Inductive loop system



**VARES**  **1000**

·VOICE ALARM SYSTEM COMPACT·



**2**

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Part 2

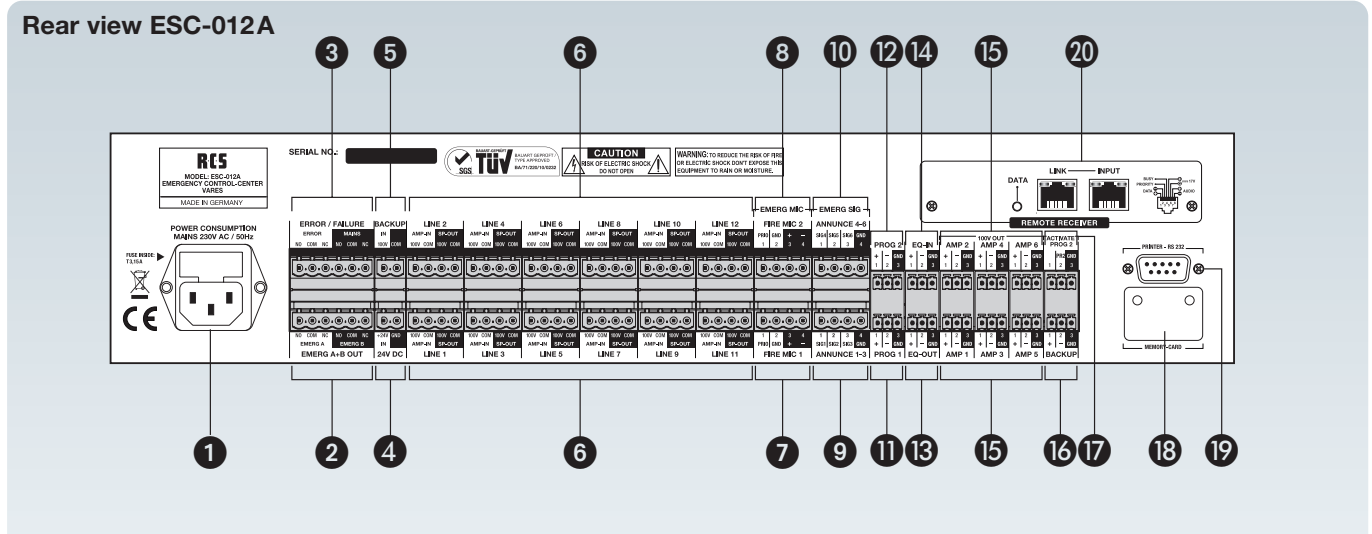


FOR 12 LINES

# ELECTROACOUSTIC EMERGENCY WARNING SYSTEM

EN 54-16 / VDE 0833-4 / VDE 0828 / IEC 50849

\_\_\_\_\_ for a maximum of system security



- 1 Power supply input 230 V AC
- 2 Output relay contact „Emergency“ A + B
- 3 Output relay contact „Error“ and „Power failure“
- 4 Input 24V-DC emergency power supply
- 5 Input backup amplifier
- 6 Speaker line 1-12
- 7 Fire brigade call station 1 (FWS1 with priority of FWS2)
- 8 Fire brigade call station 2 (FWS2)
- 9 Input for annunciator 1-3
- 10 Input for annunciator 4-6
- 11 Line-level input program 1
- 12 Line-level input program 2
- 13 Line-level output for Equalizer
- 14 Line-level input for Equalizer
- 15 Line-level output for 100V amplifier 1-6
- 16 Line-level output for 100V backup amplifier
- 17 Contact input to activate program 2
- 18 Memory card for Textmessages
- 19 Serial Interface RS232 for Printer
- 20 Digital Interface RR-120 (optional)

Technical data	VARES ESC-012A
Speaker lines	12 lines, max. 480 W each (6 lines with ELM-106)
Fire Brigade call stations	2x ESM-100D suitable for connection
Digital microphone stations	up to 10 devices ELM-106 (not monitored)
Signal outputs	13x NF 0dB; transformer balanced; 12 x 100V
Signal inputs	2x NF 0dB; unbalanced (Prg 1 + Prg 2); 13x 100V; 6x supervised switching inputs for text or alarm activation (input 6 has a special function to analyse external errors r)
Switching outputs (max. 120V AC; max. 2A AC)	2x „Emergency“ (break or open contact) 1x „Error“ (break or open contact) 1x „Power failure“ (break or open contact)
PC-interface	RS-232
Voice memory	SD-card
Display	LCD 64 x 128 px, LEDs
Control panel	2 buttons, 6 programming buttons, selection wheel
Power supply	230V AC, 24V DC
Power consumption	< 40 W
Dimensions (WxHxD)	483 x 89 x 340 mm, 2 RU
Weight	6,7 kg

## Digital Microphone Station



## Description

ELM-106 manages announcements into one or more selected zones and all-calls. An expansion to handle 12 call zones is possible by the use of an optional six-button module ELE-006.

- On an overall bus length of 100 m on CAT7 cable up to ten pcs. ELM-106 can be connected to a single ESC-012A. For larger distances please use lower resistance cables.
- With the extension module ELE-004 can be extended to a covered alarm button, three buttons for special functions and 2 fault LED's .

<b>Digital Microphone Station</b> , Electret microphone with cardioid characteristic .....	<b>ELM-106</b>
<b>Digital Microphone Station</b> , as ELM-106, but without interface RR-120 .....	<b>ELM-106 WO</b>
<b>Button Extension Module</b> , for ELM-106 to handle 12 call zones. ....	<b>ELE-006</b>
<b>Function Extension Module</b> , for ELM-106 to expand with further functions .....	<b>ELE-004</b>



**Lifesaving in the case of an emergency!**

In the case of an alarm, an electroacoustic emergency warning system may avoid panic by understandable speaker announcements, which are, contrary to the howling of a siren, a much more efficient way of initiating the evacuation of a building.

Certainly, the availability and safe working of such systems has to be guaranteed at any time by monitoring the complete signal path. The standard **IEC 50849/VDE 0828 and VDE 0833-4** defines the requirements for such systems.

### Description Control-Center ESC-012A

VARES ESC-012A has been developed in full accordance to the latest rules and regulations for security. Targeted towards small and medium-scaled usage scenarios, it handles all the tasks and challenges a voice alarm systems faces in everyday life.

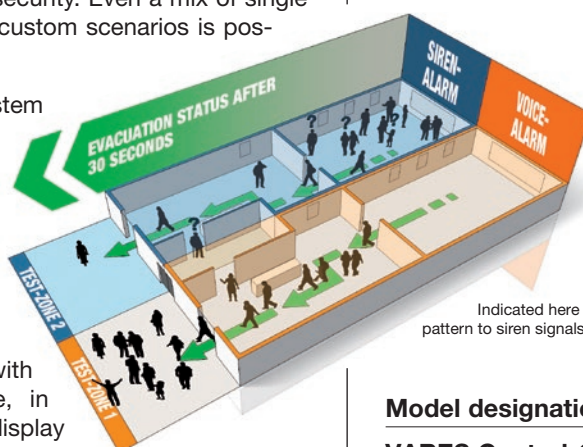
Installation is handled in an easy and straightforward way by using the LCD based user interface. All connected auxiliary components are scanned and registered automatically.

Speaker lines can be configured in 12 single or 6 A/B lines for an increased security. Even a mix of single and redundant line setups for custom scenarios is possible.

A logging function stores all system conditions on non-volatile memory in any case of a technical failure. The generated protocol can be viewed immediately or sent to a printer.

### Specifications:

- Graphical user interface with adjustable colour scheme, in any case of an alarm the display flashes in red colour.

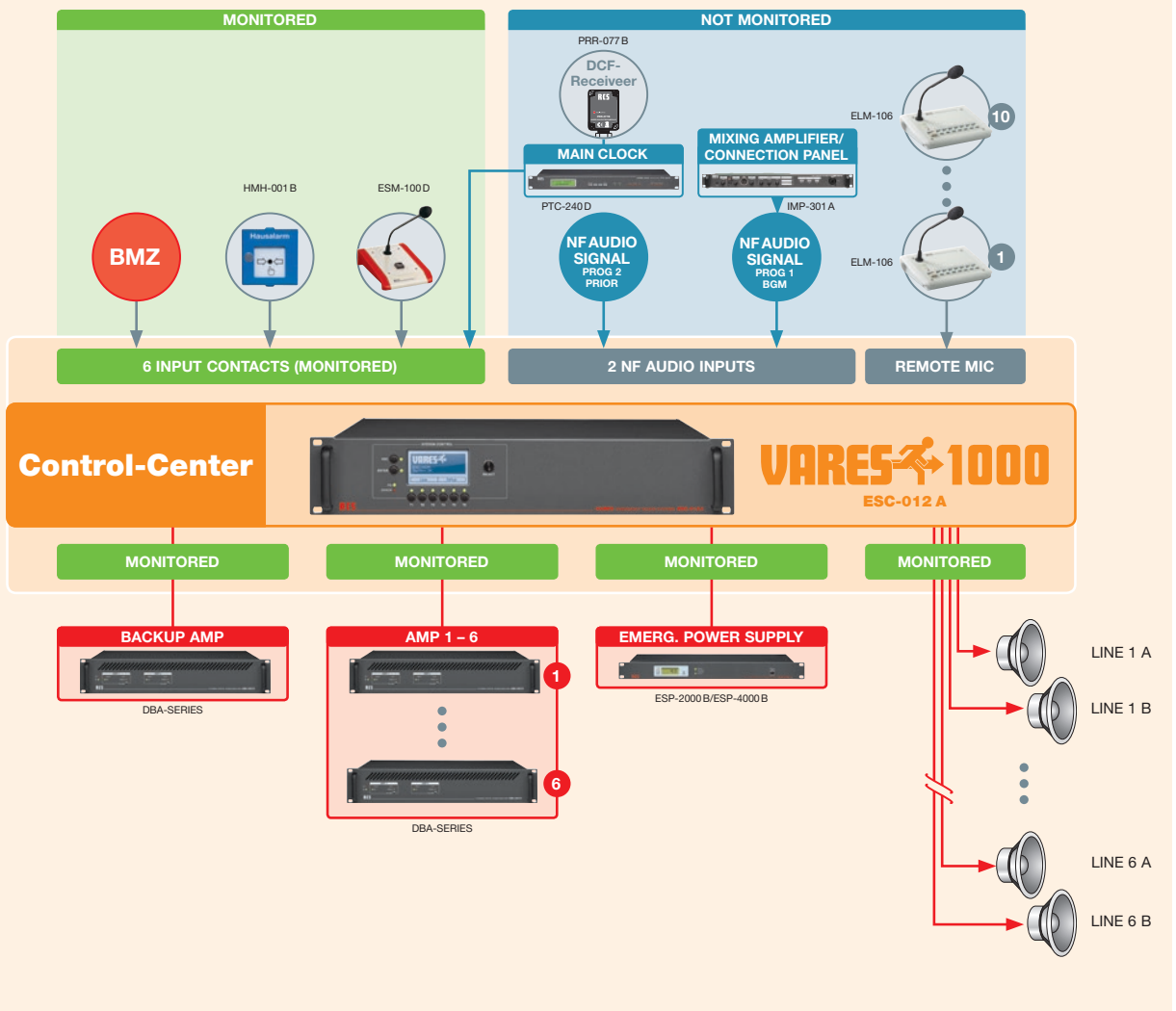


Indicated here is the different reaction pattern to siren signals or a spoken message.

- Menu interface with digital rotary encoder.
- Password protected menu interface.
- Fully variable assignment of up to 12 speaker lines to a maximum of 6 power amplifiers, maximum amplifier power is 480 W each.
- A faulty power amplifier is detected and replaced by the backup amplifier automatically.
- Two line level inputs of different priority levels can be used for various tasks, like background music distribution or paging via a telephone system.
- Free assignment of the program to any of the 12 speaker lines.
- The internal digital message memory (based on an SD card) is equipped with an evacuation announcement, a siren according to DIN 33404 and various different chimes (one tone and four tones).
- All 12 speaker lines are monitored for short circuits, line breaks and impedance variation.
- Error messages are provided by clear text display, signalling LED, sounder and dry contact.
- Up to 10 digital call stations ELM-106 can be connected.
- ELM-106 call stations can be expanded to address 12 zones by ELE-006 expansion units.
- Emergency microphones ESM-100D and ESM-020H enjoy individual 3-band equalisation for best intelligibility of any announcement (up to two emergency microphones can be connected).

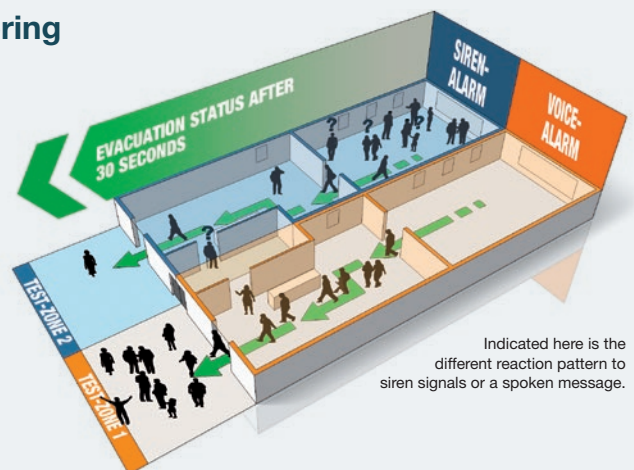
### Model designation

VARES Control-Center, 2 RU ..... **ESC-012A**



Features of the application:

- + **Amplifier and Microphone Monitoring**
- + **Text Module & Digital Speech Memory**
- + **Line Current and Battery Monitoring**
- + **Fire-Alarm-Transfer Monitoring**
- + **Speaker Line Monitoring**
- + **Automatic Error Log Recording**



Indicated here is the different reaction pattern to siren signals or a spoken message.

## Fire Brigade Call Station



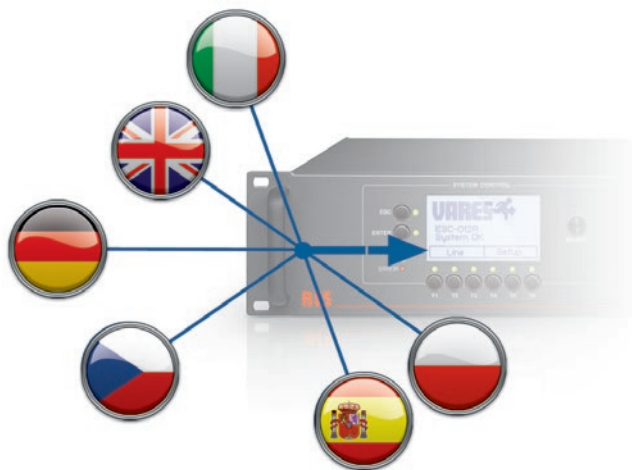
In addition to the monitored microphone, the station ELM-106 can be used.

### Description

The call station is electronically monitored compliant to **VDE 0828/IEC 50849**. Measured values of the microphone cap, the entire signal path and the press-to-talk bar are detected and analysed. The direct connection with VARES is made by a 4-pin shielded cable. The stable "slim" desktop housing has a functional design. It is suitably coloured for the specially targeted application.

**VARES Fire Brigade Call Station** ..... **ESM-100D**

## VARES Software Languages



### VARES Language Options

As alternatives to English and German ESC-012A offers a variety of menu languages as options:

1. German (factory setting, at no extra charge)
2. English **ESL-001/2**
3. Czech **ESL-001/3**
4. Spanish **ESL-001/4**
5. Italian **ESL-001/5**
6. Polish **ESL-001/6**

**VARES Software Language** ..... **ESL-001/X**  
 (Please replace the „X“ by corresponding last digits, at ordering)

## Fire Brigade Handheld Mic



### Description

The handheld microphone is electronically monitored compliant to **VDE 0828/IEC 50849**. Measured values of the microphone cap, the entire signal path and the press-to-talk bar are detected and analysed.

The direct connection with VARES is made by a 4-pin shielded cable. The handy, coloured housing with its lateral press-to-talk bar is optimized for its special purposes.

**VARES Fire Brigade Handheld Mic** ..... **ESM-020H**

## Housing and Mounting Panel for ESM-020H



### Description

**The Mounting Panel VMF-020A** for the fire brigade microphone ESM-020H provides installation in a standard housing according to **DIN 14661** and **DIN 14662** and can thus be integrated in a fire control panel.

**The housing VCF-020A** is optional, if no fire brigade control panel is available. It is designed as a standard housing according to **DIN 14661** and **DIN 14662**, in red (RAL 3000). The housing with transparent door, lockable with on-site fire brigade profile half cylinder according to DIN 18252.

- Protection type: IP40, DIN 40050
- Surface design according to DIN 14663
- The ESM-020H is part of the certification to EN 54-16

**Mounting Panel**, for ESM-020H ..... **VMF-020A**  
**Housing**, for ESM-020H (without mounting panel) ..... **VCF-020A**  
 Dimensions (WxHxD): 250x180x60 mm, 4 kg



# VARES 3000

VOICE ALARM AND PAGING SYSTEM



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Part 3



FOR UP TO 224 LINES

## DIGITAL VOICE ALARMING-SYSTEM

EN 54-16 / VDE 0833-4 / VDE 0828 / EN 50849

for a maximum of system security

# VARES 3000

## Advantages of voice alarming systems

### Lifesaving in the case of an emergency!

In the case of an alarm, an electroacoustic emergency warning system may avoid panic by understandable speaker announcements, which are, contrary to the howling of a siren, a much more efficient way of initiating the evacuation of a building.

Certainly, the availability and safe working of such systems has to be guaranteed at any time by monitoring the complete signal path. The standards IEC 50849 / VDE 0828 defines the requirements for such systems.

## Main features of the VARES-3000-SYSTEM

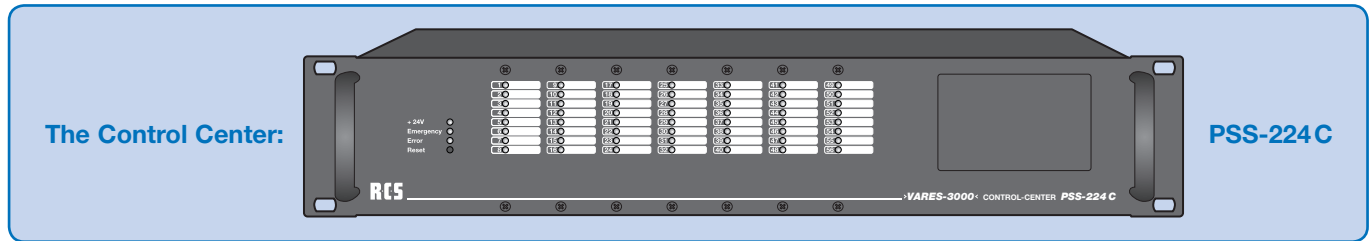
- According to DE 0833-4 / VDE 0828 / IEC 50849
- Extendable in 8 steps for up to 224 lines
- Configuration through computer software
- Archiving of set data
- Up to 24 remote microphone units
- Freely programmable allocation of individual lines
- System and product training possible

## Operational area – any busy public location

- Office- and industrial buildings
- Hotels, shopping malls
- Educational institutions such as schools, universities, etc.
- Multi-purpose arenas, sport facilities
- Train stations, hospitals
- Theaters, museums, cinemas
- Larger recreation locations, parks
- Swimming pools, thermae

# VARES-3000

## THE VARES-3000 SYSTEM AT A GLANCE



### System-components regarding usage as »DIGITAL CALL SYSTEM«

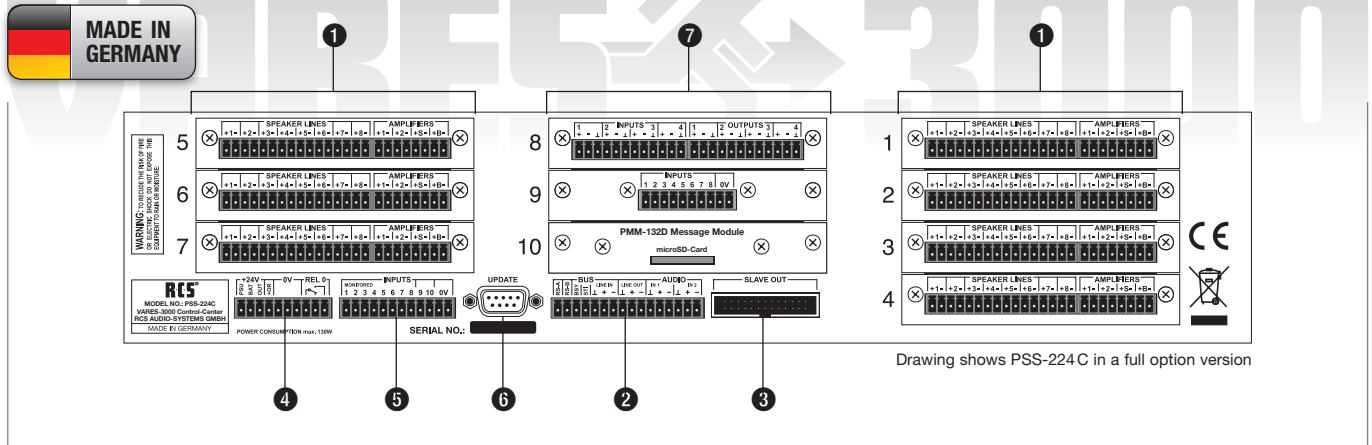
- CONTROL-CENTER — see page 18–19
- EXTENSION-UNIT — see page 18
- MAINLOCK — see page 29
- PROGRAM SWITCH PANEL — see page 30
- REMOTE MICROPHONES — see page 24–28
- EXTENSION MODULES — see page 20–23

### System-components regarding usage as »VOICE ALARMING SYSTEM«

COMPLIANT TO VDE 0833-4 / VDE 0828 / IEC 50849

- CONTROL-CENTER
- EXTENSION-UNIT
- MAINLOCK
- AMPLIFIER MONITORING
- PROGRAM SWITCH PANEL
- REMOTE MICROPHONES
- EXTENSION MODULES
- CONVERSATION-UNIT

## Rear view PSS-224 C



- 1 7 empty slots for mounting the relay cards PRC-008 C, PRC-408 C or PRC-508 A.
- 2 Bus connector RS-485, 3 symmetrical ground free audio inputs, input 1 as symmetrical ground free audio input or output, 1 symmetrical ground free audio output.
- 3 Extension connector for further slave devices in order to upgrade up to 224 lines and for connection with the program selector PPS-024 A.
- 4 Power supply connector 24 V and emergency power input, relay 0 for special functions.
- 5 10 isolated alarm inputs, 2 isolated switch inputs, freely programmable.
- 6 Connector for firmware update.
- 7 3 optional module slots for installation of additional modules, e.g. text- and signal memory PMM-132 C.

## Extension Unit PEU-056 B



A maximum of 3 extension units can be used per PSS-224 C. The control center PSS-224 C can manage a maximum of 224 different speaker lines or relay contacts.

Through the modular assembly even the extension unit can be adapted to the particular requirements. The basic version of the PEU-056 B will be delivered without relay cards. It can be extended with up to 56 line outputs in various designs. Very new regarding this is the use of the monitored relay card PRC-408 B according to **VDE 0828/IEC 50849**.

The power supply and control comes from the center PSS-224 C. Therefore the relay cards PRC-008 C, PRC-408 B and PRC-508 A will be used just like for the PSS-224 C.

### Description of Extension Unit

This digital extension unit PEU-056 B for further 56 speaker lines, is connected through the extension cable PFK-200 to the speaker selector PSS-224 C.

### Model designations

- „VARES-3000“ Extension Unit, ..... **PEU-056 B**  
for PSS-224 C, 2 RU
- „VARES-3000“ Extension Cable, ..... **PFK-200**  
connecting cable for PEU-056 and Program selector

Technical data	PSS-224 C CONTROL-CENTER	PEU-056 B EXTENSION UNIT FOR PSS-224 C
Speaker lines	8 to max. 56	8 to max. 56
Bus connection	RS485-Bus	-
Audio output level	0 dB / 775 mV	-
Module slot	3 Module slots	3 Module slots
Power supply	24 V DC / max. 800 mA	24 V DC / max. 750 mA
Power source	Switching power supply / battery	from PSS-224 C
Dimensions	483 x 89 x 270 mm, 2 RU	483 x 89 x 270 mm, 2 RU
Weight	3,3 kg (fully equipped 5,5 kg)	3,2 kg (fully equipped 5,1 kg)



Picture shows PSS-224 C in a full option version

**Modular expandable in steps of 8 from 8 to 224 lines**

## Description Control-Center

The digital, easy programmable and flexibly expandable center PSS-224 C of the VARES-3000 system takes over the audio- and alarm management for devices with up to 224 speaker lines, or switching contacts.

In connection with the extension unit PEU-056B, of which a total of 3 units can be operated on one PSS-224C, the project specific extension from 8 up to 224 lines in eight intervals is easily possible.

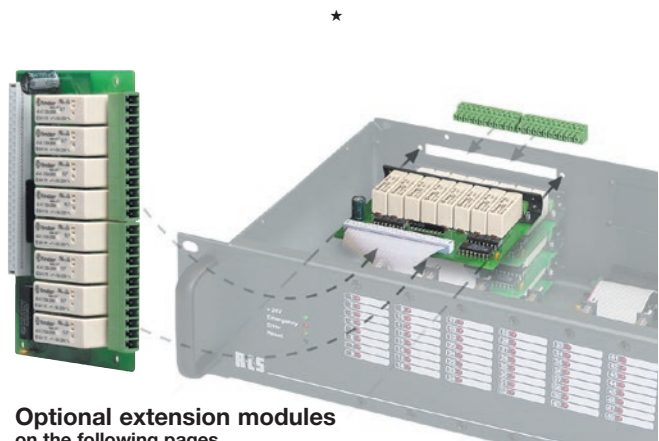
The basic devices PSS-224C and PEU-056B are offered without a relay card, but depending on the requirements 3 different types are available. As an innovation the relay card PRC-508B including the evaluation of the amplifier and loudspeaker monitoring according to **IEC 50849**.

10 monitored and 2 unmonitored isolated inputs enable a remote regulator of the VARES-3000 center. The easy programming of the center PSS-224 C is carried out via the computer software "ConfigV3000", as in all devices of the "VARES-3000 System".

The most important characteristics combined:

- Monitoring of all system components according to **VDE 0828/IEC 50849**.
- Activation and monitoring of up to 224 speaker lines (in connection with 3x PEU-056B).
- Flexible usage of the relay cards PRC-008C, PRC-308C, PRC-408C and PRC-508A.
- Connection and monitoring of up to 128 power amplifiers (in connection with 16x PHM-802C)
- 8 monitored and 2 unmonitored isolated inputs.
- Additional 8 isolated inputs with optional input module PIC-208B (not monitored).

- Monitored 24V power supply- and emergency power inputs.
- Relay 0 for special functions.
- Obligatory call output 24 V 2 A.
- One symmetrical ground free audio inputs and one symmetrical ground free audio output.
- Relay card PRC-308C can be used for special functions such as alarm, fault and as an amplifier priority call card.
- Bus connector RS-485.
- Integrated quartz clock for exact monitoring intervals, which can be synchronized via the DCF-receiver module PRR-077B.
- Time related remoting of the PSS-224 C according to the main clock PTC-240D.
- Optional module: display and button module, text- and chime module, measuring- and monitoring module, audio-matrix-module for audio routing.



**Optional extension modules**  
on the following pages...

## Model designation

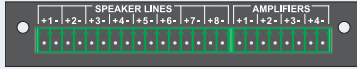
„VARES-3000“ Control-Center, 2 RU.....

**PSS-224 C**



## Output- and control modules

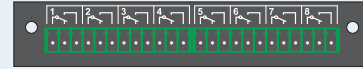
### Digital Matrix-Relay card 4x8



- Monitored relay card for 1 – 4 amplifier inputs and 8 speaker outputs
- All speaker lines are shorted in idle status
- Line monitoring with cyclical monitoring the signal path in accordance with **VDE 0828/IEC 50849** (measuring module PMO-350C required)
- Automatic two-pole line shutdown at impedance exceeded and short-circuit of the line
- Freely programmable using VARES-3000 software

Matrix-Relay card 4x8 ..... **PRC-508A**

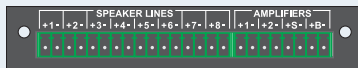
### Relay card 8 lines



- Relay card for 8 speaker lines
- Relay cards are equipped with power contacts
- Prior ranking with regard to switching off middle inductive demands up to 600 VA
- The work and break contacts can be coupled for faster wiring with internal jumpers

Relay card 8 lines ..... **PRC-008C**

### Digital Matrix-Relay card 2x8



- Monitored relay card for 2 paging amplifiers and 8 speaker outputs
- Integrated amplifier monitoring with spare switching to spare amplifier. In combination with PRC-308C selective measurements of up to 8 amps are possible
- Input for program amplifier with uninterruptible background music for lines without announcements
- All speaker lines are shorted in idle status
- Line monitoring with cyclical monitoring the signal path in accordance with **VDE 0828/IEC 50849** (measuring module PMO-350C required)
- Automatic two-pole line shutdown in case of external short circuit
- Freely programmable using VARES-3000 software

Lin.	Leiternummer	Chan	Profil	unten Stromwert	oben Stromwert	Stat.Pegel	Vol.Pegel	Diffenz.	Substratwert	Leitung	Bemerkung
100	Line 1	1	147	757	919	887	886	1.52.11	1.250 Ohm	2.000 VA	Line ok
101	Line 2	3	35	772	925	887	885	1.02.11	32.2 Ohm	250 VA	Line ok
102	Line 3	2	205	756	914	890	893	+ 1.02.11	56.2 Ohm	177 VA	Line ok
104	Line 4	2	166	760	918	894	895	+ 1.02.11	62.1 Ohm	127 VA	Line ok
106	Line 5	2	134	756	914	890	893	+ 1.02.11	100 Ohm	100 VA	Line ok
108	Line 6	2	72	756	914	890	893	1.02.11	100 Ohm	100 VA	Line ok
107	Line 7	2	33	772	925	887	887	1.02.11	394 Ohm	26.0 VA	Line ok
108	Line 8	2	134	756	914	890	893	+ 1.02.11	100 Ohm	100 VA	Line ok
109	Line 9	2	136	761	919	895	-	-	-	-	Line wird nicht überwacht
110	Line 10	3	35	762	920	897	-	-	-	-	Line wird nicht überwacht
111	Line 11	3	18	764	922	899	-	-	-	-	Line wird nicht überwacht
112	Line 12	2	167	756	914	890	-	-	-	-	Line wird nicht überwacht
113	Line 13	2	136	759	917	893	-	-	-	-	Line wird nicht überwacht
114	Line 14	2	73	759	917	893	-	-	-	-	Line wird nicht überwacht
115	Line 15	2	32	775	923	899	-	-	-	-	Line wird nicht überwacht
116	Line 16	1	140	759	917	893	-	-	-	-	Line wird nicht überwacht
117	Line 17	2	134	756	914	890	-	-	-	-	Line wird nicht überwacht
118	Line 18	3	35	772	920	896	-	-	-	-	Line wird nicht überwacht
119	Line 19	3	18	770	920	894	-	-	-	-	Line wird nicht überwacht
120	Line 20	2	166	762	918	891	-	-	-	-	Line wird nicht überwacht
121	Line 21	2	135	760	918	894	-	-	-	-	Line wird nicht überwacht
122	Line 22	2	73	764	922	899	-	-	-	-	Line wird nicht überwacht
123	Line 23	2	33	770	920	894	-	-	-	-	Line wird nicht überwacht
124	Line 24	1	140	767	916	896	-	-	-	-	Line wird nicht überwacht
125	Line 25	-	-	-	-	-	-	-	-	-	Line wird nicht überwacht
126	Line 26	-	-	-	-	-	-	-	-	-	Line wird nicht überwacht
127	Line 27	-	-	-	-	-	-	-	-	-	Line wird nicht überwacht

Matrix-Relay card 2x8 ..... **PRC-408C**

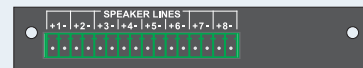
### Relay card special functions



- Relay card for special functions
- Programmable for alarming, error indication and emergency call
- Switching option as error indication during power failure
- Programming of the direct contacts switched via buttons of the call station
- Condition of the relay indicated on the display
- 2 relay cards can be installed simultaneously (the operating mode can be selected via jumper)

Relay card special functions ..... **PRC-308C**

### Relay card ground leakage

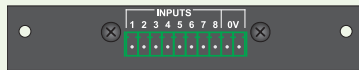


- Relay card for earth fault impedance monitoring with 80Hz AC voltage in connection with the measuring module PMO-350C
- Use in systems where an interruption of the speaker lines to the power amplifier is not structurally possible
- Red flashing LEDs indicate a measured ground fault on the front of the control center

Relay card ground leakage ..... **PRC-248B**

## Input modules

### Input module PIC-208 B



- 8 input contacts can be programmed freely
- Assignment of any line selection
- Selection of different chime types or text files with an text module installed
- Inputs can be configured for priority or background operation
- Operating possible as opener or closer

Input module ..... **PIC-208 B**

### Input module PIC-416 C/216 C

#### PIC-416C:

- Expands the Control Center by another 16 alarm inputs
- Control in continuous or impulse operation possible
- Standalone bus device on DIN rail mountable



#### PIC-216C:

- Extension module for 16 monitored alarm inputs
- Up to 3 modules at one PIC-416C can be connected (max. 64 inputs)

Input module, Master (16 monitored inputs) ..... **PIC-416 C**

Input module, Slave (16 monitored inputs) ..... **PIC-216 C**

### Input module PIC-516 C

- Digital input module for DIN rail mounting
- The standalone bus device can be connected to any point of the bus cable
- 16 programmable inputs (control ON/OFF switchable)
- Up to 3 modules at one PIC-216C can be connected (max. 64 inputs)
- The inputs are added. Thereby variable control of background zones is possible

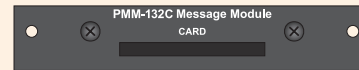


Input module (16 inputs) ..... **PIC-516 C**

## Function modules



### Text- and Signal memory



- Built into rear panel of the PSS-224 C
- Recording 32 individual announcements texts or attention signals in mp3 format
- Recording on a compact-flash memory-card
- Alerting text on the card
- Signal chime according to **DIN 33404**
- Seven several chime available
- Monitoring according to **VDE 0828/IEC 50849** via PMO-350 C

Message module ..... **PMM-132 B**

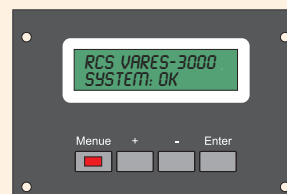
### Chime and alarm module

- Internal module for installation in the control-center PSS-224 C
- 7 kinds of chime: 1-tone, 2-tone up or down, 3-tone up or down, 4-tone up, 4-tone Westminster
- Signal chime according to **DIN 33404**
- In addition, the module issue different tones for measuring test and monitoring purposes. Measured tones: 200Hz, 1kHz, 15kHz and 20kHz
- Level adjustable from -16 dB to -4 dB (in 3 dB steps)



Chime and alarm module ..... **PCM-100 C**

### Display- and button module



With this display module actual operating conditions, system- and error messages can be directly displayed on the VARES-3000 center PSS-224 C via a 16x2 LCD as well as the setting of some important parameters directly on the device. The module has to be handled with 4 buttons on the front side of the module.

Display- and button module ..... **PLC-400 A**



## Function modules

### Measuring and monitoring module

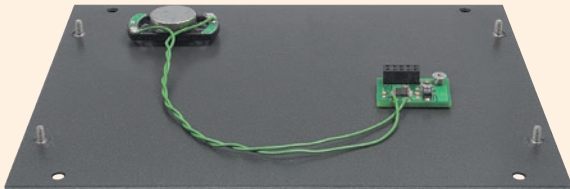
- Internal module for installation in the control-center PSS-224C
- Module for all measuring and monitoring functions
- Evaluates different audio and test signals
- Necessary for line, microphone and amplifier monitoring
- Compliant to **VDE 0828/IEC 50849**
- Impedance Tester



Measuring and monitoring module ..... **PMO-350C**

### Microphone monitoring module

- Optional module for built in PDM-208B
- Microphone monitoring according to **VDE 08028/IEC 50849**
- Included in PFM-308C and PFM-330D
- Monitoring in combination with PMO-350C



Microphone monitoring module ..... **PMO-400B**

### NF-Switch

- Input for alarm or paging signal
- Connection for Priority call-voltage (+ OR connection to PSS-224C)
- Input for background music
- Inputs and outputs balanced
- The module is designed for DIN rail mounting



NF-Switch, 1-Channel ..... **PNF-101A**  
for DIN rail mounting, 3 HP

### Networking of VARES-Systems

- The PNC-224A is a DIN rail module with 4HP width for networking VARES-3000 systems. It requires in the master system, a PBE-185A and on the DIN rail a PBE-385A. Up to 7 PNC-224A can be operated on a PBE-385A.
- Each PNC-224A allows control of 8 groups of lines in the SLAVE unit. Can in each case be driven all 224 lines of the SLAVE unit.
- The remote control center can be installed up to 1.2 km away from the MASTER system



Network Control ..... **PNC-224A**  
for DIN rail mounting, 4 HP

### Remote module



- Allows connection of external modules (relay card, measuring module) to the control center PSS-224C
- Remote modules can be installed up to 1.2 km away from the actual center
- The visual message of active external relay card takes over the LED display module PLE-628A
- Makes the coupling of two control-center PSS-224C in master / Slave operation possible. The slave center can operate independently in its own bus-section. It is possible further bus devices (regardless of the main unit) connected to the second central

Remote module ..... **PBC-610A**

### Display module

- Assembly instead of a relay card (as dummy) in the front panel of the PSS-224C
- Displays the status of the line relay of a remote relay card or the relay card of a remote Central
- Status display with two-color LEDs (red/green)
- Display for background and voice relay
- Simulation of all relay card types
- Display faulty speaker lines by flashing red LED



Display module ..... **PLE-628A**



## Function modules

### I<sup>2</sup>C Bus-Extension – Master



- The PBE-185A is an extension module of the PSS-224 C for extension and potential separation of the internal I<sup>2</sup>C-bus to the outside
- Control of the slave module PBE-285A in the extension unit PEU-056 B
- Control of the DIN rail module PBE-385A for interfacing further components on DIN rail
- Remote the slave modules with a max. Cable length of 20m

**Bus-Extension Master module** ..... **PBE-185 A**  
for PSS-224 C

### I<sup>2</sup>C Bus-Extension – Slave

- **PBE-285A:** Extension module of the PEU-056 B to extend the I<sup>2</sup>C bus from the Control Center PSS-224 C
- **PBE-385A:** DIN rail module extending the I<sup>2</sup>C bus from the PSS-224 C. It provides the isolated I<sup>2</sup>C bus other DIN rail modules (such as the PNC-224 A) available.

Both modules require the master module PBE-185A in the PSS-224 C. The connecting cable can be up to 20 m long.

**Bus-Extension Slave module** ..... **PBE-285 A**  
for PEU-056 B

**Bus-Extension Slave module** ..... **PBE-385 A**  
for DIN rail mounting, 3 HP, for remote assemblies

### RS485-Hub 5-Channel

- 5-channel, potential free RS485 hub for rail mounting in 3 HP width
- Star-shaped wiring of RS485 buses possible
- Several PFH-485A can be operated parallel at the bus. Similarly, a cascading with other Hubs is possible
- Display of communication by green and red LEDs



**RS485-Hub, 5 Channel** ..... **PFH-485 A**  
for DIN rail mounting, 3 HP

### Audio-Matrix module



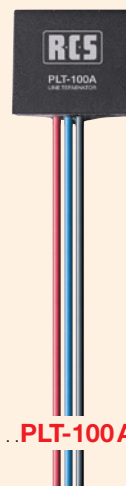
- Option module with partial rear wall for installation in the PSS-224 C
- Single or simultaneous switching of 4 inputs to 4 outputs
- Designed as balanced audio connections
- Control by the paging buttons of the microphone station (when used as line buttons) or with the numeric keypad PZM-310 B
- Control possible with program switching field PPS-024A, the master clock PTC-240B or the input modules PIC-208B, PIC-516C
- Possible application is, for example, the routing of the signals for 3 fold sports hall
- The relays used are equipped with gold-plated contacts. Ideally suited for signal applications and low voltages
- Contacts designed for a max. Switching capacity of 25VA (max. permanent current 0.5A)

**Audio-Matrixmodul, 4x4** ..... **PAX-404 A**

### End-of-Line Modul

End-of-line module to terminate the loudspeaker lines for standard monitoring when connecting more than 20 loudspeakers per line. The module is connected at the line end on the last speaker.

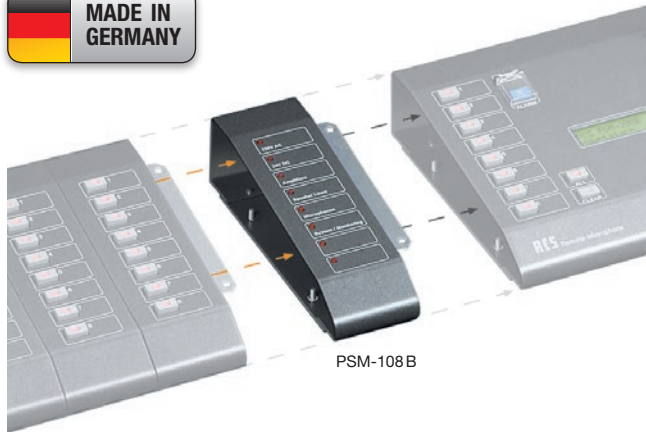
- Conform to EN54-16
- Finishing element for 100V-speaker line in 2-wire technology
- Various connection options for optimal line adaptation (3 connections)
- The module is potted and therefore has optimal moisture protection



**End-of-Line Modul** ..... **PLT-100 A**  
Dimensions (WxHxD) 21x18x13 mm

# VARES 3000

## Microphone fault indicator module PSM-108 B



### Description

This microphone fault indicator modul displays selectively numerous appearing errors according to IEC 50849 directly on one selected microphone. The module is mounted to the microphone as extension unit.

The following malfunctions are signalled:

- ❶ Failure of main power supply
- ❷ Failure of emergency power supply
- ❸ Failure of an amplifier
- ❹ Change of impedance of a speaker line
- ❺ Failure of a microphone or its cable
- ❻ Failure of the siren or text module
- ❼ Bus interruption or failure of a device
- ❽ Memory error or failure of a module

\*

Technical data	PSM-108 B
Power supply	via cable PFK-101 (5V)
Current consumption min./max.	150 µA / 5 mA
Fault indicators	8
Dimensions (W x H X D)	55 x 45 x 182 mm
Weight	300 g

**Microphone fault indicator module** ..... **PSM-108 B**  
Substation extension unit for PDM-208 B

## Microphone Extension Unit PEM-008 B



A maximum of up to 7 extension units PEM-008 B may be connected modularly to the remote microphone PDM-208 B.

Thus up to 64 speaker lines may be addressed individually or in groups with a fully extended microphone unit.

Any of the freely programmable buttons may be programmed for individual zones of groups with multiple speaker lines. The buttons may also be programmed as „direct buttons“.

**Microphone Extension Unit**, with 8 switches ..... **PEM-008 B**  
Substation Extension Unit for PDM-208 B

## Adress module PAM-130 A



This address module is suited for mounting to the remote microphone types PDM-208 B and PTM-101 B.

The module displays the internal address (e.g. room number) which is sent by the caller of a different remote microphone (PTM- or PWM-101 B).

The addresses of the remote microphone PTM-101 B and the conversation-unit PWM-101 B are being evaluated through the connected main line, as well as the three-digit display.

**Adressmodul** ..... **PAM-130 A**  
Substation Extension for PDM-208 B

## Ten keys pad PZM-310 B



Ten keys pad as extension unit of the substation PDM-208 B, for selection of single or less used zones.

By the use of the PZM-310 B, the substation remains compact and clear.

All speaker lines are separately selectable. Similarly speaker groups can be configured. The background music of each line can be independently enabled or disabled.

**Ten keys pad** ..... **PZM-310 B**  
Substation extension unit for PDM-208 B



## Remote microphones description

With the basic version of the digital remote microphone PDM-208B, 8 loudspeaker groups or speaker lines can be controlled.

The module for the extension of remote microphones (PEM-008B) increases the switching possibility for 8 further buttons in order to enable extension by 64 memory buttons.

Alternatively it can be expanded by a tenner keyboard PZM-310B (up to 224 lines)

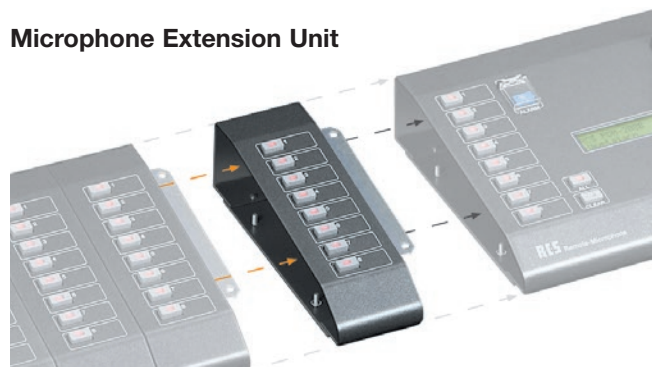
The remote microphone PDM-208B is additionally equipped with a LCD-display with plain text, via which diverse information can be displayed.

- Each tact switch function is individually programmable. This means every tact switch can be dedicated to every speaker line or speaker group. In addition different chimes and alarm functions are possible.
- The Microphone amplifier has a built-in gate to reduce background noise and a built-in compressor to improve speech transmission.
- Big talk button with busy light, All Call button with indicator and covered alarm button with light.
- A standard Cat. 7 cable can be used as bus cable, which enables a bus length up to 1 km without additional amplification, an easy and low priced installation. Additional cable for bus feed depends on current consumption, only at longer distances.

- Power supply for remote microphones via bus cable (25 pin D-sub connector PBA-, PWS-, PAS-300B).
- Configuration of the remote microphones is possible by the software „VARES-3000 Config“ via every bus connection.
- Firmware update by update-socket on the device by the manufacturer.

Technical data	PDM-208 B
Frequency range	100 ~ 15.000 Hz
Characteristics	Cardioid (Electret)
Power supply	24V DC / 55 mA
Power source	from PSS-224C (via bus cable)
Dimensions	211 x 42 x 181 mm
Weight	1,1 kg

## Microphone Extension Unit



## Model designations

„VARES-3000“ Display Remote Microphone, with 8 switches ..... **PDM-208 B**

„VARES-3000“ Extension Cable, Microphone Extension Unit PEM-008B ..... **PFK-101**

## All call remote microphone



## Fire Brigade remote microphone



### Description

This addressable all call remote microphone is suited for building the intercommunication system with up to 200 participants.

The remote microphone has a busy LED and is connected via status line to the PSS-224C. Each time you press the Talk button, the address is transmitted to the VARES-3000 system. In case you speak on a PTM-101B, a BUSY-LED lights up and the busy line will be occupied for all other remote microphones.

The electret condenser microphone, with cardioid characteristic, and the built-in microphone amplifier with gate and compressor function guarantees perfect speaker comprehensibility without blasting.

Please consider the following features:

- A noise-compensated C-condenser-capsule with cardioid characteristic is built into the gooseneck.
- Desktop microphone is symmetrically built and powered with 24 V DC.
- The remote microphone has a very low back-coupling ratio. It is equipped with a 25-pin Sub-D connector, which allows it to be connected to any VARES-3000 system bus socket.

★

Technical data	PTM-101 B
Power supply	from PSS-224 C via bus cable, 24V DC
Frequency range	100 - 15.000 Hz
Bus connections	25-pin. sub-D cable Bus-connector socket PBA-, PWS-, PAS-300 B
Microphone level	0dB to -12dB internal switchable
Characteristics	Cardioid
Dimensions (WxHxD)	131 x 42 x 181 mm,
Weight	850 g

„VARES“ All call remote microphone ..... **PTM-101 B**

### Description

This fire brigade remote microphone PFM-308C with red side panels is monitored electronically according to **VDE 0828/IEC 50849**. Up to 8 speaker line groups can be switched on via these memory buttons as well as prepared texts from the text module PMM-132 B of the PSS-224C. In case of an alarm a building can be evacuated effectively. Easy installation and intuitive operation is self explanatory.

- Remote microphone with integrated monitoring module PMO-400 B for microphone monitoring according to **VDE 0828/IEC 50849**.
- The pre amplifier for the microphone is equipped with a gate in order to blank side tones, a compressor for improved comprehensibility and blasting.
- Large speak button with integrated busy-indicator, all call button as well as a covered alarm button.
- Freely programmable configuration of each individual memory button, which means that any speaker line or group can be assigned to a button simultaneously.
- Additionally a variety of chime and alarm functions are to be assigned.
- Configuration of the remote microphones via „ConfigV3000“ software possible from each bus connector.
- Firmware update by update-socket on the device by the manufacturer.

Technical Data	PFM-308 C
Power supply	from PSS-224 C via bus cable, 24V DC
Frequency range	100 - 15.000 Hz
Bus connections	25-pin. sub-D cable, Bus-connector socket PBA-, PWS-, PAS-300 B
Memory buttons	8
Characteristics	Cardioid
Dimensions (WxHxD)	221 x 42 x 181 mm,
Weight	1,1 kg

„VARES“ Fire Brigade remote microphone. **PFM-308 C**



### Description of the remote microphone

This fire brigade wall remote microphone PFM-330D in a red, lockable sheet steel housing with a viewing window is in accordance with the norm ÖNORM F 3033 and is electronically monitored according to **VDE 0828/IEC 50849**. Five alarm announcements can be called in five freely configurable zones, via illuminated buttons from the text module PMM-132 B of the PSS-224 C. Through this, in case of an emergency, a directed evacuation can be initiated.

The device was especially developed for its intended use and was optimized for the operator (rescue worker). Easy installation and intuitive operation are a matter of course.

Please consider the following features:

- Device is in accordance with **ÖNORM F 3033**.
- 5 standardized illuminated buttons for emergency announcements.
- Standardized illuminated button for clear.
- Standardized, covered illuminated button for reverse, switching off the active alarm announcement.
- Visual signal of the operating condition of the PFM-330 D (operation, failure, bus busy)
- Pre-amplifier for the microphone with gate to blank side noise and compressor for better comprehensiveness and blasting.

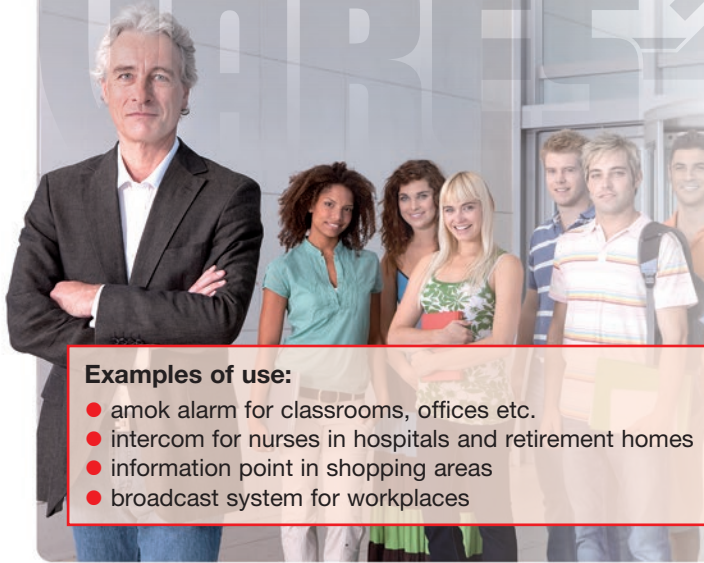
- Monitoring of the microphone, (module PMO-400 B integrated on main board) the signal ways and the speak button according to **VDE 0828/IEC 50849**.
- Easy mounting, caparison- and flush-mounting are possible.
- Robust, lockable sheet steel housing with Plexiglass.
- Easy programming / allocation of the alarm announcements via the "ConfigV3000" software.
- Exchangeable lock in a standard half cylinder format.

★

Technical data	PFM-330 D
Frequency range	300Hz-6kHz
Characteristics	Cardioid
Power supply	from PSS-224 C (via bus cable) 24V DC
Bus connection	10-pin. system plug
Microphone	dynamic hand microphone with talk button
Dimensions	300 x 200 x 70 mm
Weight	1,7 kg

### Model designation

„VARES-3000“ Fire Brigade Wall remote microphone ..... **PFM-330 D**



### Examples of use:

- amok alarm for classrooms, offices etc.
- intercom for nurses in hospitals and retirement homes
- information point in shopping areas
- broadcast system for workplaces



### Description

PWM-101B acts as a very versatile extension of the digital VARES-3000 system. Besides a classic talk-back functionality it offers the functionality to serve as an essential security asset for **precisely targeted alarms in any case of emergency**. Especially in amok situations it provides a secure and prioritised communication channel between the calling point and the head office.

It is possible to send an alarm message from a classroom only to the secretariat without alerting the whole building. Each PWM-101B is equipped with an individual address code, so the secretariat is informed about the origin of the incoming call in the very moment the push-to-talk button on PWM-101B is pressed. Reactions can be initiated very quickly and targeted this way.

Please consider the following features:

- integrated pre-amplifier with voice-operated gate function.
- high-quality compressor for equal microphone sound level.
- 3-stage microphone amplifier input gain switch and a microphone amplifier volume trim pot.
- 6 W 5" - loudspeaker including 100V-transformer.
- up to 200 PWM-101 B can be used parallel on a BUS.
- Transformer symmetrical NF-output.
- Can be connected directly via BUS-line (Cat 7).
- Programmable line allocation for PSS-224C via module PIC-208 B.
- Addressable status-output in order to evaluate the according area of speech.

- Built on power-coated, perforated steel plate front panel equipped with a red "busy"-LED.
- Available as surface or flush-mounting.



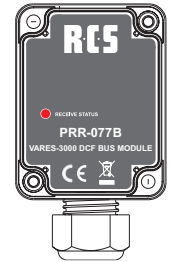
Technical data	PWM-101 B/101U
Power rating (music power handling)	6 W (10W)
Adjustments at 100V (in Watt)	6 – 3 – 1,5 W
Power Supply	24V / 50mA
Microphone capsule / Characteristic	Electret; Cardioid
Sound pressure at 1W/1m	95 dB
Nominal gauge	775mV
Nominal impedance	600 ohms
Dimensions (WxHxD); Weight; Colour	180 x 180 x 65 mm; 1 kg; white

### Model designations

„VARES-3000“ Conversation-Unit, .....	<b>PWM-101 B</b>
..... optional Accessories .....	
Surface-mount housing, for PWM-101 B .....	<b>UPG-400</b>
Flush-mount housing, for PWM-101 B .....	<b>APG-400</b>



DCF-Bus module  
PRR-077 B



## Description

This master clock makes it possible to drive and control up to 130 side clocks on 2 side clock lines. These operate independently from each other in impulse operation, and control up to 240 switching contacts dependent on time (in connection with VARES-3000 center PSS-224 C).

The PTC-240D can additionally be expanded with one further relay card (PTC-008B) with up to 16 relay switching outputs.

The computer software "ConfigV3000" makes easy programming of the master clock possible.

Please consider the following features:

- Monitoring of the NU-lines regarding overload or short circuit.
- Storing the position of the slave clock in case of power failure without extra battery (power reserve 3 weeks). Slave clocks be reset after return of the mains voltage.
- Monitored 24 V emergency power input and 24 V power supply input.
- Freely programmable allocations of all relay contacts for up to 250 orders of events.
- Card 1 can be used for special functions (error, chime).
- 2 slave-clock outputs on 5-8 contacts of the relay card 1 to extend the NU-lines 1 and 2 for more slave clocks (loaded with up to 6A per output).
- The DCF-receiver module PRR-077 B is a compact, independent additional module. It synchronise all devices at

the bus, which need a correct system time. Mounting is possible on any position of the VARES-3000 bus within 1 km. The monitored DCF-receiver module connected to the Main Clock by using a screened 4-pin cable.

- Time and date of the internal quartz clock synchronized with the optionally external DCF-receiver module PRR-077 B.
- The PRR-077 B can be mounted in outside areas as well for better reception, because the housing equivalent protection class IP 65.
- A switch output with relay 0 for switching events without additional card PTC-008 B.
- Internal temperature measurement.
- Network capable (LAN) in conjunction with the remote transmission module PRS-500 B.

★

Technical data	PTC-240 D
Display	2-line LCD-Display, cleartext
Power reserve	10 years
Capacity / Number of NU-Lines	0,5 A/linie; 65 auxiliary clocks per line
Operation mode NU-Lines	Impulse minutes, 2 seconds
Pulse repetition	Normal: 1/min. adjust: 10/min.
Relay contacts	optional 8/16
Pulse length	1 – 59 seconds (digital switchable)
Contact capacity	6A/160 V each channel
Interfaces	RS-485-Bus
Memory capacity	253 (events)
Time base	Quarz, optional DCF-77
Power supply	24 V DC / max. 2 A
Dimensions / Weight	483 x 44 x 171 mm, 1 RU / approx. 2 kg

## Model designations

„VARES-3000“ Main Clock, incl. side clock control, second output, etc. .... PTC-240 D  
 „VARES-3000“ DCF-Receiver Module, Radio receiver, wall mounting (HxWxD) 94x65x58 mm ..... PRR-077 B

### optional Accessories

„VARES-3000“ Relay Card, for Main Clock PTC-240D ..... PTC-008 B  
 „VARES-3000“ Main Clock AC adaptor 24 V, 1A, for Main Clock PTC-240D ..... PSU-024/24



### Description

With the PSS-024 A, 24 differently programmed background music zones can be switched on and off manually. Thus each individual button of the PSS-024 A may be assigned to one relay of the control center. Groups of speaker lines can be programmed for each individual button.

The straight forward programming of the individual buttons is carried out through the computer software ConfigV3000.

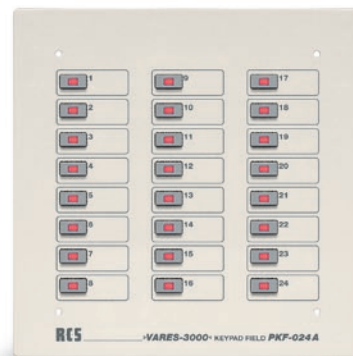
Please consider the following features:

- Up to 3 program control panels PSS-024 A may be operated from the control center.
- Connection of the program control panels similar to extension unit through extension cable PFK-200 onto the SLAVE-connection PSS-224 C.
- The program control panel PSS-024 A may additionally be removed from the 19" rack through an additional internal bus module PBS-400 A. Thus it may be used remotely on any spot of the VARES-3000 bus.
- Connection to a bus- connector socket PBA-300 B through connector cable PMC-003.
- The bus connection may be monitored via the control center PSS-224 C. The actual monitoring function can be switched on or off via ConfigV3000.

- Each button can be programmed for groups of speaker lines or individual speaker lines through ConfigV3000.

★

### Keypad Field PKF-024 A



The PKF-024 A is a keyboard for flush wall-mounting with VARES bus connection. With 24 lighted keys it can be used for switching from background music zones that were previously programmed via the software „ConfigV3000“ in the device.

The PKF-024 A functionally equivalent approximately to the program switching field PSS-024 A for 19" rack mount and enabled sleep status of zones in a PSS-224 C. There are up to 4 devices simultaneously on VARES bus usable.

„VARES-3000“ Keypad Field, 24 keys ..... **PKF-024 A**  
Dimensions (WxHxD) 182 x 182 x 40 mm

**Flus-mount housing**, for flush mounting of the PKF-024 A. . . **UPG-400**  
Dimensions (WxHxD) 159 x 159 x 76 mm

Technical data	PPS-024 A
Power supply	via. Bus cable PFK-200 (5V)
Power consumption all off	7mA
Power consumption all on	20mA
Connecting plug „SLAVE IN“	terminal strips 26-pin
Dimensions (WxHxD)	483 x 45 x 185 mm, 1 RU
Necessary installation depth	200mm
Weight	2,3kg

### Bus module PBC-400 B

The PBC-400 B bus module is necessary in order to remove the program control panel PSS-024 A from the VARES-3000 main device PSS-224 C locally. It may be used remotely on any spot of the VARES-3000 bus.

**Bus module** ..... **PBC-400 B**

### Model designations

- „VARES-3000“ Program Selector, 1 RU ..... **PPS-024 A**
- „VARES-3000“ Extension Cable, connecting cable for PEU-056 B and PSS-024 A ..... **PFK-200**



For 8 call amplifiers and 2 spare amplifiers



## Description

PHM-802 C digital amplifier switchover unit is designed to monitor up to 10 power amplifiers simultaneously. Up to 8 amplifiers can be configured as call amps, backed up by up to 2 spare amplifiers.

PHM-802 C works self-sustaining and independent of other components. Alternatively, it can be integrated into a VARES-3000 system.

Please consider the following features:

- Setting up PHM-820A is done easily via a clearly represented menu that is displayed on the big front display. All the programming work is done by just four function keys, a computer is not necessary to configure PHM-802 C.
- Faults will be indicated until the cause of the problem is repaired.
- 8 call amps can be linked with 1 spare amp, or two groups made of 4 call amps each can be linked to 2 spare amps (1 spare amp per group). Can also be used without spare amplifier.
- PHM-802 C offers an input for 230 V AC switching power supply (switched to 24V) and an additional input for 24 V DC emergency power.

- A variety of pilot tones is available, ranging from 19 kHz to 25 kHz
- A bigger number of amplifiers can be monitored by using several PHM-802 C.
- The measured level of the pilot tone can be adjusted for each 100V power amplifier at the device.
- An alarm output for external fault messages allows easy routing of messages within the voice alarm system.
- The menu is available in English or German language.
- In connection with the bus option, a detailed error transmission (error log for evaluation in the control center) to a PSS-224 C by the bus monitoring is possible.
- Optionally, the monitor module PMU-802A can be installed to intercept all 10 amp outputs.

★

Technical data	PHM-802 C
Display	LCD Dot Matrix 2x24, illuminated, adjustable contrast
Monitored Amplifier	8 + 1 (Spare) or 2x 4 + 2x 1 (Spare)
Pilot tone	19/19,5/20/20,5/21/21,5/22/22,5/23/23,5/24/24,5/25 kHz
Sample rate	adjustable 15/30/45/60/90 Sec. (5 Sec. with Bus-Option)
Power consumption	5 W
Listening power	Amplifier 1,3W RMS
Bus connection	RS485-Bus (optional) to RJ-45, failure announcement outputs, RS232 for Firmware-Update
Switching capacity	6 A each channel
Power supply	24V DC
Power source	Switching power supply / Accu (emerg. power supply 24 V)
Dimensions (WxHxD)	483 x 44 x 171 mm (1 RU)
Weight	1,5 kg

## Monitor option PMU-802 A

After installation of the monitor module every 10 amplifier outputs (8 + 2) can be monitored. The selection of the desired channel and volume via keyboard on the device or connected PC with the software „ConfigV3000“.

**Monitoroption**, for PHM-802 C ..... **PMU-802 A**  
 Monitor speakers: Broadband, 4W 8 ohms. Listening power: 1.3 W RMS amplifier

## Bus option PHM-485

With this interface modification option the amplifier monitoring can be integrated in the VARES-3000-System. The monitoring of the device is guaranteed by the bus cable, as well as different configurations of the software „ConfigV3000“.

**Bus option** ..... **PHM-485 B**

## Model designation

„VARES-3000“ Amplifier Monitoring, 1 RU ..... **PHM-802 C**



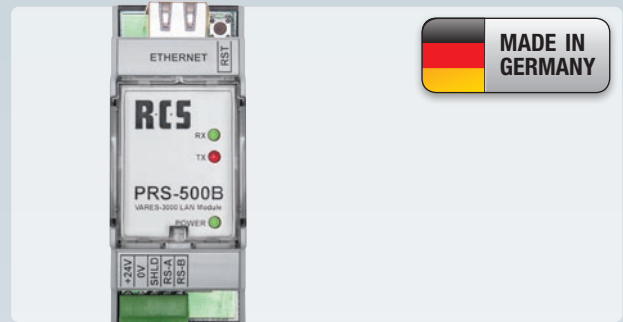
## „VARES-3000“ SYSTEM-ACCESSORIES

### UDP Telecommunication Module

For configuration and fault diagnosis of the VARES-3000 Control Center PSS-224C via a PC or laptop.

Remote configuration and fault diagnosis can be implemented economically directly via the Internet and can be performed with the „ConfigV3000“ software from any location.

The PRS-500B is designed for easy mounting on DIN rail.



### „VARES-3000“ UDP Telecommunication Module

**PRS-500 B**

(L x W x H) 90 x 36 x 61 mm; Connectors: System-plug (Bus 5 pin.) , Network (RJ 45)

PBA-300 B



PWS-300 B



PAS-300 B



Easy to install Sub-D 25 socket for connecting remote microphones with the bus.

### „VARES-3000“ Bus-Connector, ..... **PBA-300 B**

25-pin connecting socket

### „VARES-3000“ Flush Mount Socket, ..... **PWS-300 B**

25-pin connecting box for in-wall mounting

### „VARES-3000“ Surface Mount Socket, .. **PAS-300 B**

25-pin connecting box for on-wall mounting

### „VARES-3000“ Microphone Cable, 3 m ..... **PMC-003**

for substations

Power supply for the current supply of the appropriate VARES-3000 systems.

### „VARES-3000“ Power Supply, 48 VA ..... **PSU-048/24**

24 V power supply

### „VARES-3000“ Power Supply, 120 VA ..... **PSU-120/24**

24 V power supply

### „VARES-3000“ Power Supply, 240 VA ..... **PSU-240/24**

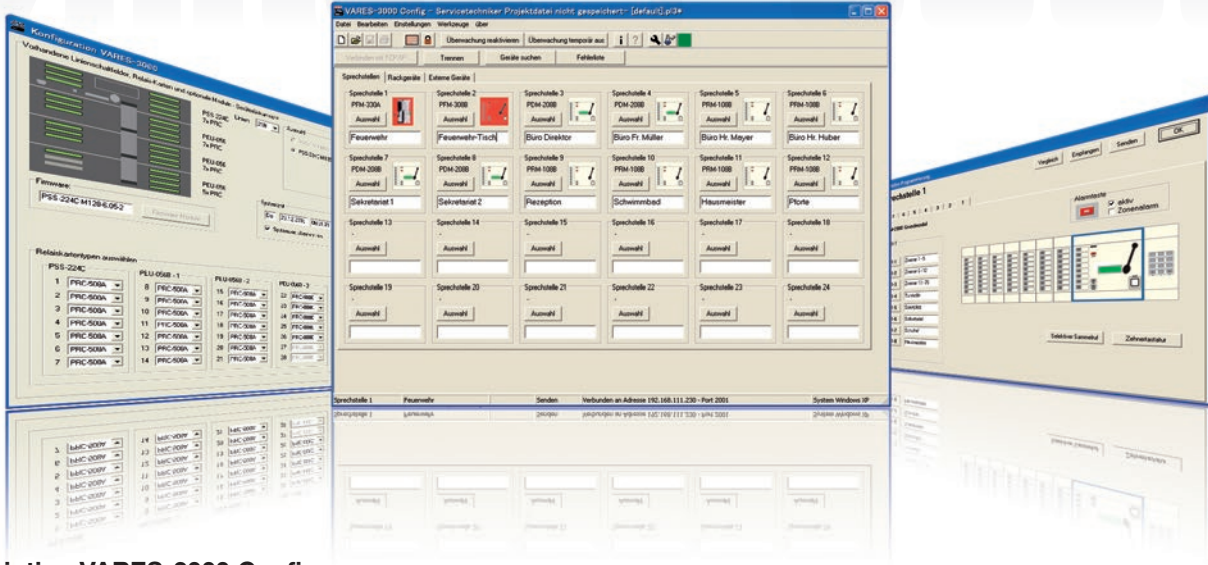
24 V power supply

### „VARES-3000“ Short Bridge Connector

**PSB-025**

„Short Bridge “ for PBA/PWS/PAS-300 B, to bridge unassigned bus connector females

Technical data	PSU-048/24 POWER SUPPLY	PSU-120/24 POWER SUPPLY	PSU-240/24 POWER SUPPLY
Input voltage	85-264V AC	88-132V AC / 176-264V AC	88-132V AC / 176-264V AC
Output voltage	24V DC	24V DC	24V DC
Output current	2A DC	5A DC	10A DC
Tolerance	± 1%	± 1%	± 1%
Ripple & noise	480 mV	80 mV	80 mV
Efficiency	80%	84%	84%
Can be used for	1x PSS-224 C +15x PDM-208 B	1x PSS-224 C + 2x PEU-056 B +15x PDM-208 B + 7x PEM-008 B	1x PSS-224 C + 3x PEU-056 B +15x PDM-208 B + 7x PEM-008 B
Weight	0,31 kg	0,79 kg	1,20 kg



### Description VARES-3000 Config

With this new and improved „ConfigV3000“ software, the entire system can be clearly configured in a comfortable way within a minimum amount of time.

The software is adaptable to any computer with a standard network (Windows software) and is connected via the „TCP/IP Telecommunication Module“ PRS-500 B.

Each speaker line can be labeled clearly and then be selected in groups for background music, all call and main alarm.

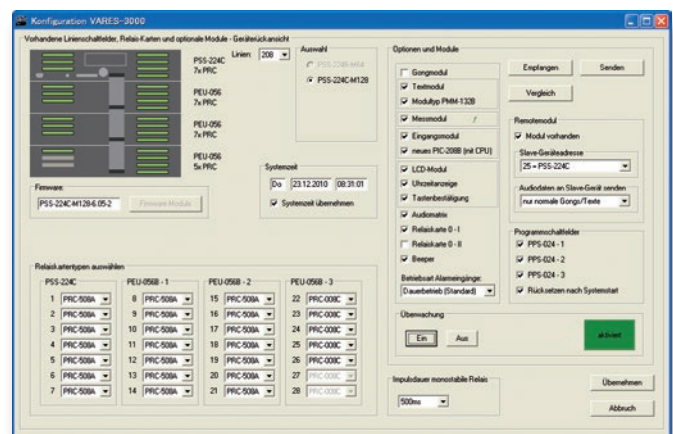
Regarding the speaker line configuration, each button can be allocated to any number of lines. For each single remote microphone, microphone level, compressor gain and pre gain can be set up separately.

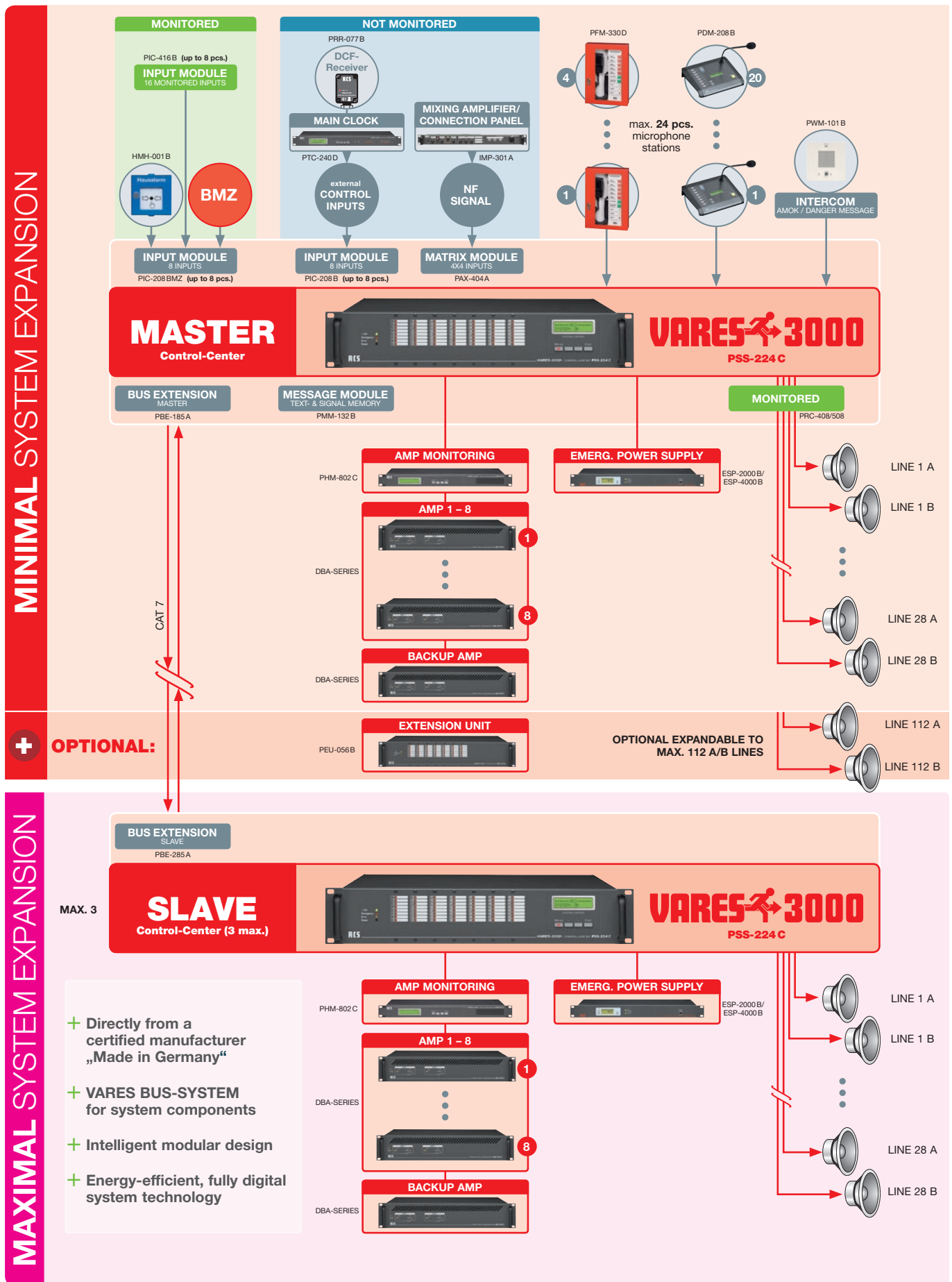
Please consider the following features:

- As the user, administrator or service technician with various authorizations login via a password.
- Archiving the setting data of each connected device and labeling options of the remote microphones, speaker lines and single buttons.
- Global programming of the chime and text levels.
- The readout of existing configurations and copying the remote microphone configurations is possible.
- Allocation of special functions such as alarm, error and obligatory call with the relay card PRC-308 C.
- Programming a button as direct button with impulse or switching function.

- Service menu with error statistics, relay and button control.
- Alarm button for each remote microphone can be deactivated.
- A significant test function of the individual components is possible.
- Calibrating the speaker lines; calibrating the controlled amplifier.
- Configuration of master clock.

★





# VARES-3000 SOFTWARE-CONFIGURATION

EN 54-16 CERTIFIED SYSTEM / COMPLIANT TO VDE 0833-4 / VDE 0828 / IEC 50849

# RCS

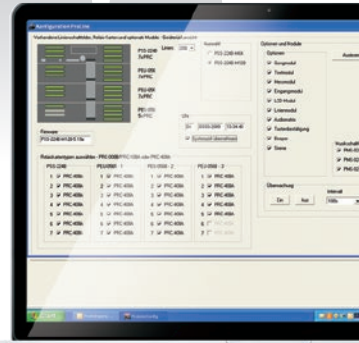
# VARES-3000



## „VARES-3000“ Hard- and Software-Configuration

If you like to configure your VARES 3000 System by us, please feel free to contact us. We like to submit you an offer.

Hard- and Software-Configuration..... **PHS-1000**





EN  
54-4  
certified

EN  
54-16  
certified

EN  
54-24  
certified

## SAA-NETWORK

·FLEXIBLE VOICE ALARM MATRIX SYSTEMS·



4

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Part 4



# SAA network

FLEXIBLE VOICE ALARM MATRIX SYSTEMS

for a maximum of system security

Our VAS network system provides extremely flexible solutions for networked voice alarms and evacuation in complex building structures.

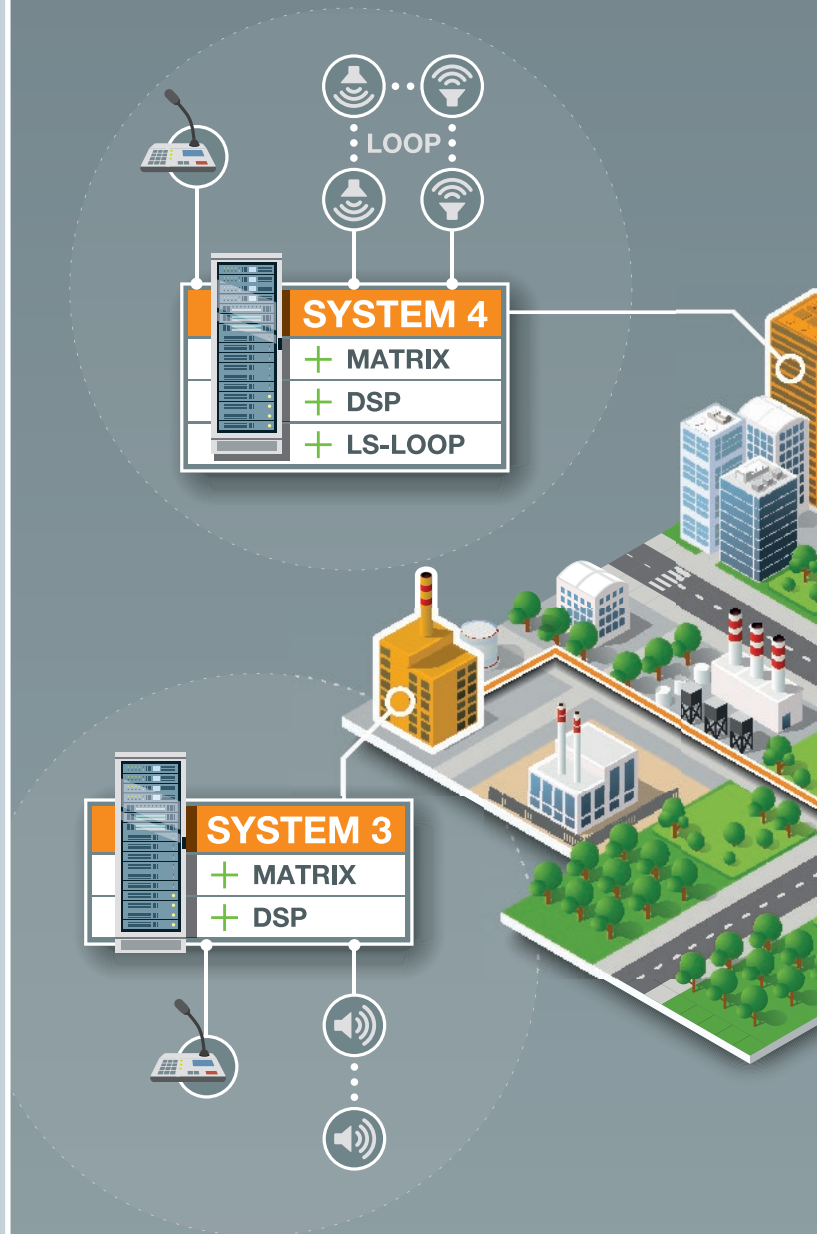
### Description

The VAS network system is suitable for all objects with correspondingly high requirements.

It is used in extensive shopping malls, exhibition halls, airports, large school complexes, universities and interconnected offices and authorities.

### CHARACTERISTICS OF THE VAS NETWORK SYSTEM:

- Fully digital audio transmission
- Fiber optic connection (FOC) for the communication of the VAS Network systems with each other (see example graphic)
- System expansion up to 254 network user
- Complete integration of fire alarm and building management system
- Flexible, project-adapted and scalable system configuration
- Digital and multi-channel power amplifiers in different power classes
- 45 global audio channels
- Advanced DSP features within each VAS network system
- Modular design of all control devices
- 4 simultaneous messages or eviction texts in different zones
- Redundant communication between control units and system station
- Buffering of announcements and time-shifted playback of busy lines
- Intercom function between all connected system call stations
- Speaker lines can be monitored by impedance, EOL and loop technology
- Remote maintenance of the VAS network system via Ethernet or GSM network
- and much more





**REMOTE MAINTENANCE**  
GSM

**SYSTEM 1**

- + MATRIX
- + DSP
- + FOC



**CONFIGURATION**  
PC-Software



**SYSTEM 2**

- + MATRIX
- + DSP
- + EOL

EOL



**SAA network**  
FLEXIBLE VOICE ALARM MATRIX SYSTEMS

Advice, planning and offer for a customized VAS network system for your project can be obtained from:

**+49 80 61-35 01-0**



## PA devices

AMPLIFIER, EMERGENCY POWER SUPPLY, MIXER:



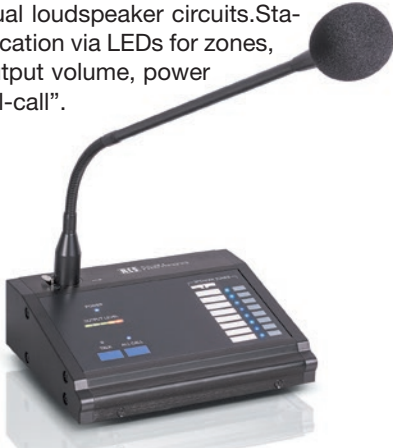
# 5

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Part 5

## DLM-108A | for group call / 8 circles

Digital microphone desk for selecting the 8 individual loudspeaker circuits. Status indication via LEDs for zones, talk, output volume, power and "all-call".



**Microphone desk ..... DLM-108A**  
for remote control of 8 LS circuits and "all-call"

## DLE-008A | Microphone extension unit

Call station extension for digital microphone communication station for selecting an additional 8 individual loudspeaker circuits. Status indication via LEDs for zones.

Up to 3 extensions can be connected per station.



**Paging station extension .... DLE-008A**  
with 8 buttons, microphone extension for DLM-108A

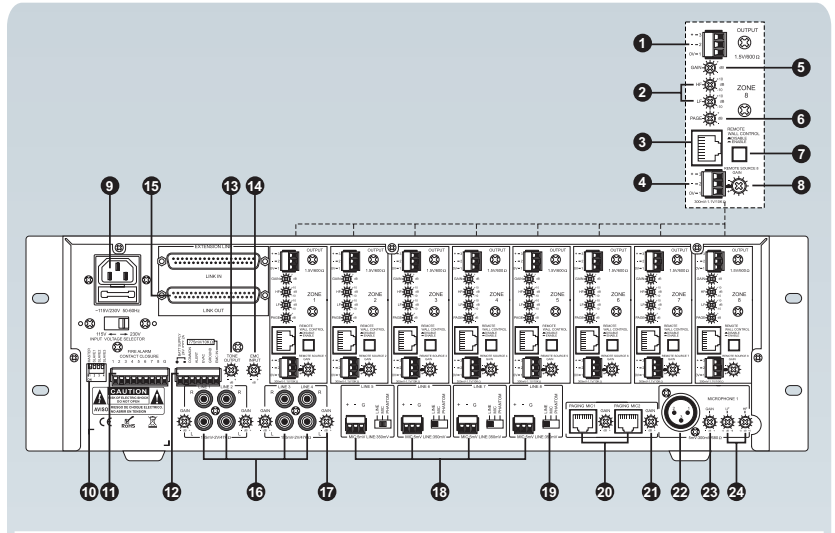
## DRI-208A | Wall Panel

Wall module for remote control of the DZM-808A with additional local inputs for the zones.

For arbitrary assignment of various audio sources, e.g. CD-player, satellite receiver, radio programs and 8 output zones.



**Wall control panel ..... DRI-208A**  
for flush mounting, including flush-mounted housing



- 1 output for the audio signal of the zone
- 2 tone controls for each zone
- 3 Connection for wall module DRI-208A
- 4 Input for an audio signal (line level), only for associated zone
- 5 GAIN knobs to adjust the zone output level
- 6 volume controls PAGING for MIC 1 and 2
- 7 button activates control via wall module DRI-208A
- 8 Level controls for the audio signal of the input on the wall module
- 9 AC power connection cables
- 10 DIP switches for setting main and slave devices
- 11 (fire) alarm inputs
- 12 EMERGENCY contacts (for 24V emergency power supply, Common, Alert, EVAC, Ground, EMC IN)
- 13 volume controls for alarm signals
- 14 volume controls for EMC INPUT
- 15 D-Sub connectors for interconnecting multiple DZM-808A
- 16 stereo inputs LINE 1 to 4
- 17 GAIN control for input level adjustment from LINE 1 to 4
- 18 audio inputs LINE / MIC 5 to 8
- 19 Switches for the inputs LINE / MIC 5 to 8
- 20 RJ-45 jacks for PAGING MIC 1 and 2
- 21 Input sensitivity controls of PAGING MIC 1 and 2
- 22 jack for an XLR microphone
- 23 XLR microphone input sensitivity control
- 24 Equalizer HF (treble) and LF (bass) for the XLR microphone

Technical data	DZM-808A
Frequency range (+1 / -3 dB)	80 - 18.000 Hz (MIC); 20 - 20.000 Hz (LINE)
LINE 1-4 (input)	195 - 2.000 mV / 10 kohms
LINE 5-7 (input)	5 mV / 600 ohms (MIC); 350 mV / 10 kohms (LINE)
Phantom power	+48 V
MIC	5 - 280 mV / 600 ohms
Desktop Mic. / wall control panel	300 - 1.100 mV / 10 kohms
Tone control (+/- 10 dB)	100 Hz, 10.000 Hz
Outputs	775 mV / 600 ohms
EMC input	775 mV / 10 kohms
Signal to noise ratio	> 65 dB (MIC) / > 85 dB (LINE) / > 65 dB (Crosstalk)
Harmonic distortion (THD)	< 0,07 %
Display	Power, MIC 1, Paging busy, monitor output
Priority	MIC 1, voice alarm, local microphone, local MIC paging, remote zone paging, LINE 1-8
Communication	4800 bits / sec., RJ-45 (connection), RS-485 (protocol)
Power consumption / Power	20 W / 230 V AC (50 Hz) & 24 V DC
Dimensions (WxHxD)	484 x 132 x 304 mm; 3 RU
Weight	6,0 kg



8 IN - 8 OUT MATRIX



## Description

The DZM-808A system is an extremely flexible sound reinforcement solution for multi-room applications. It is ideal for use in hotels, restaurants, conference rooms, schools, sports and fitness centre.

There can be 8 different audio sources, e.g. CD player, satellite receiver; radio programs are distributed to 8 output zones. Any assignment is possible. The key component is the digital audio zone matrix DZM-808A. Operation requires one amplifier for each output used. This can be a single power amplifier or an active loudspeaker box.

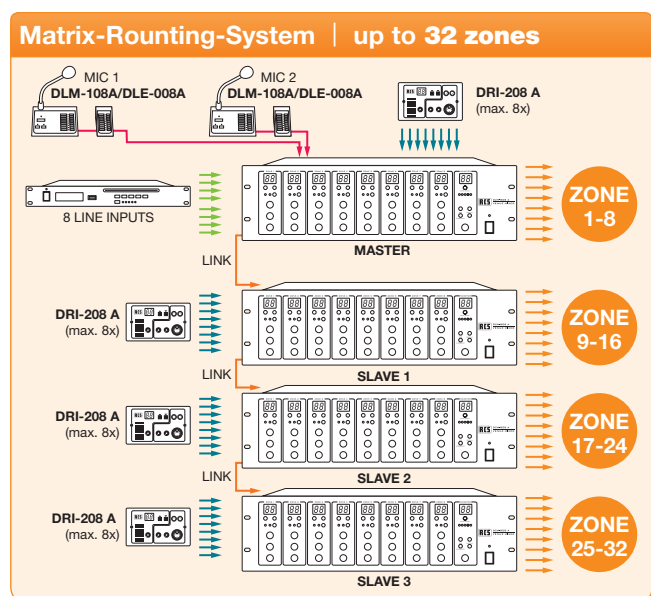
The corresponding wall control panel DRI-208A for remote control of the DZM-808A and with additional local inputs for the zones, is optionally available.

Please consider the following features:

- 8 audio inputs/audio outputs.
- Inputs 1 - 4, LINE, with gain control.
- Inputs 5 - 8, switchable MIC / LINE.
- 2 command microphones and 1 local microphone (for all zones) connectable.
- 1 additional audio input per zone, not routable, with gain control.
- Up to 8 wall panels DRI-208A can be connected as a remote control unit.
- Extensible up to 32 zones.
- Microphone, music and master volume control per zone, 2-tone equalization per zone, 7 segment LED displays per zone.
- Priority management.

- Emergency announcement with priority for all zones, even with extension.
- 3 different alarm signals.
- Clipping display.
- Monitor function with integrated loudspeaker.
- Can be used as a 19" built-in device or as a desktop device. 19" mounting brackets are included.
- 230 V mains or 24 V emergency power.

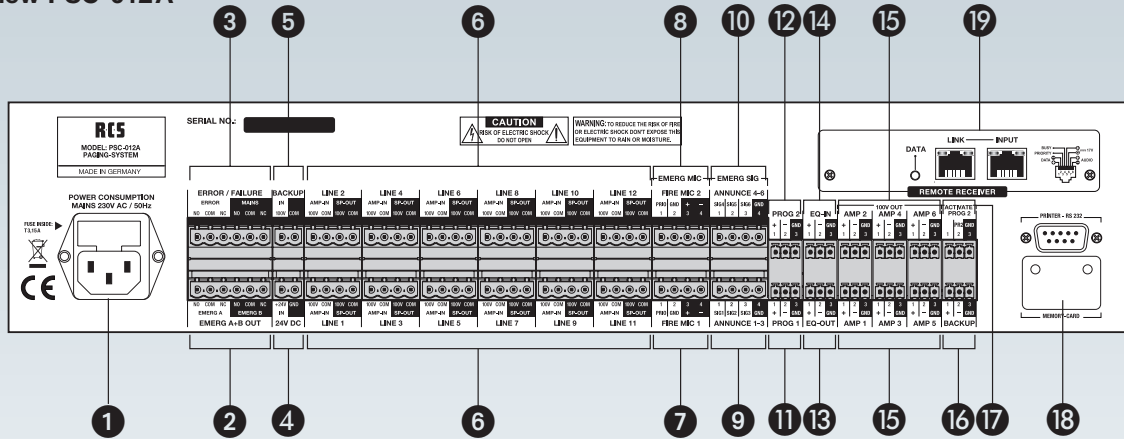
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## Model designation

Digital 8 Zone Audio-Matrix ..... **DZM-808 A**  
8 IN / 8 OUT, extensible up to 32 IN / 32 OUT

## Rear view PSC-012A

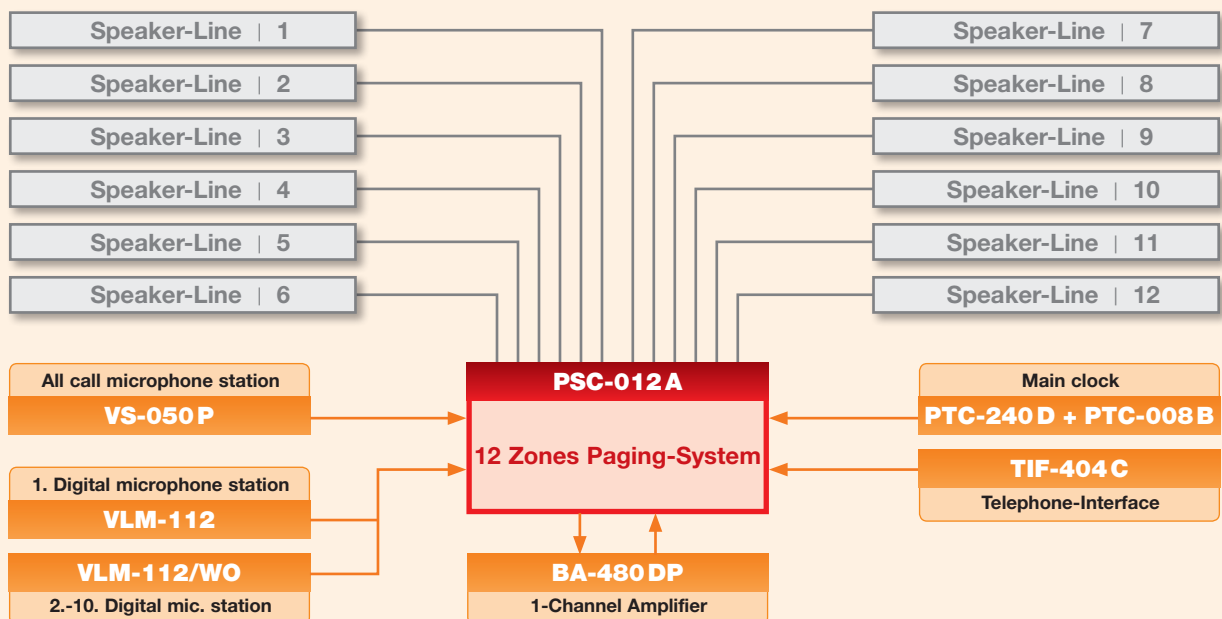


- ❶ Power supply input 230 V AC
- ❷ Output relay contact „Emergency“ A + B
- ❸ Output relay contact „Error“ and „Power failure“
- ❹ Input 24V-DC emergency power supply (optional)
- ❺ Input 100V Line from backup amplifier (optional)
- ❻ Speaker line 1-12
- ❼ Fire brigade call station 1
- ❽ Fire brigade call station 2
- ❾ Input for annunciator 1-3
- ❿ Input for annunciator 4-6
- ⓫ Line-level input program 1
- ⓬ Line-level input program 2
- ⓭ Line-level output for Equalizer
- ⓮ Line-level input for Equalizer
- ⓯ Line-level output for 100V amplifier 1-6
- ⓰ Line-level output for 100V backup amplifier (optional)
- ⓱ Contact input to activate program 2
- ⓲ Memory card for Textmessages
- ⓳ Digital Interface RR-120 (optional)

Technical data	PSC-012A
Speaker lines	12 lines, max. 480 W each
All call microphone stations	2 suitable
Digital microphone stations	up to 10 devices VLM-112/WO
Signal outputs	13x NF 0dB; transformer balanced; 12 x 100V
Signal inputs	2x NF 0dB; unbalanced (Prg 1 + Prg 2); 13x 100V; 6x supervised switching inputs for text
Switching outputs (max. 120V AC; max. 2A AC)	2x „Emergency“ (break or open contact) 1x „Error“ (break or open contact) 1x „Power failure“ (break or open contact)
Voice memory	SD-card
Display	LCD 64 x 128 px, LEDs
Control panel	2 buttons, 6 programming buttons, selection wheel
Power supply	230V AC, 24V DC
Power consumption	< 40 W
Dimensions (WxHxD)	483 x 89 x 340 mm, 2 RU
Weight	6,7 kg

## SAMPLE OF USE | 12 Zones Paging-System

PSC-012A



# 12-ZONES PAGING-SYSTEM

# RCS



## Description

The Paging-System PSC-012A is ideal for building paging systems with up to 12 lines. Additionally the system can be used for background music.

The compact device is designed for the installation in 19" cabinets and offers high flexibility because of only 2 RU required space.

Please consider the following features:

- Easy configuration directly on the device using the clear display with auto run configuration to detect the connected devices.
- Freely programmable signal memory with SD card for attention signals or announcements.
- Connection for up to 10 Digital microphone stations VLM-112/WO.
- 2 All call microphone stations with priority connectable (VS-050 P).
- 6 Switching inputs to initiate signals or texts (e.g. via Telephoneinterface TIF-404 C or the DCF-Mainclock PTC-240 D).
- 2 program inputs with different priorities.
- Looping for external equalizer.
- Even with only one amplifier ready for operation. Up to 12 amplifiers can be connected.
- Operating with 230 V mains or 24V DC power supply.

- The volume of the background program can be determined separately for each of the six LINE outputs to the amplifiers.

★

## ACCESSORIES | optional

### Digital Microphone Station



**Digital Microphone Station, ..... VLM-112**

Electret microphone with cardioid characteristic, to control 12 lines

**Digital Microphone Station, ..... VLM-112WO**

as VLM-112 but without RR-120

**Function Extension Module, for VLM-112 ..... VLE-004**

to control and display further special functions (via separate line)

**All Call microphone station, ..... VS-050 P**

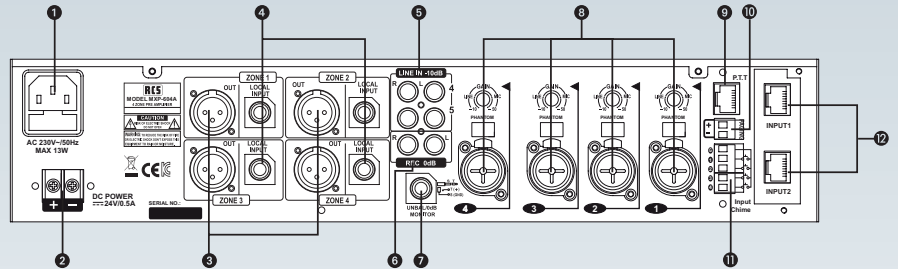
Screw-type connector, balanced, priority

## Model designation

**12 Zones Paging-System, 2 RU, ..... PSC-012A**

Rear view

- 1 AC power supply connection cable
- 2 24 V DC power supply terminal
- 3 Output for zones 1 - 4
- 4 LOCAL INPUT, direct inputs, Jack 6,3 mm
- 5 LINE 5, 6 Inputs Cinch
- 6 REC OUT, 0dB, Cinch
- 7 Monitor Out, 0dB, jack 6,3 mm
- 8 MIC/LINE Inputs, combo jacks, XLR/jack 6,3 mm
- 9 Connector for mic. station VLM-100A
- 10 PAGING-Input (with priority)
- 11 Contact to remote chime
- 12 Port for receiver-module RR-40 (optional), to connect microphone stations or MXM-104



Technical data	MXP-604 A
Frequency range	20 Hz – 20.000 Hz (-3dB)
THD	MIC: better than 0,1% bei 1 kHz; LINE: 0,05% at 1 kHz
Noise level	MIC: better than 65dB; LINE: better than 87dB
Cross Talk	MIC: 60dB, LINE: 70dB
Inputs	MIC/LINE 1-4: -50 dBu (2.45 mV), 5 kohms, balanced MIC/LINE 1-4:-10 dBu (245 mV), 15 kohms, balanced. LINE 5-6: -10 dBu (245 mV), 15 kohms, balanced PAGING: -10 dBu (245 mV), 10 kohms, balanced
Outputs	REC OUT: 0 dBu (775 mV), 3 kohms, unbalanced MONITOR: 0 dBu (775 mV), 200 ohms, unbalanced
Power supply	230 V mains power (50/60 Hz) or 24 V DC (emergency power supply)
Power consumption	12,6 W
Dimensions (WxHxD)	483 x 88 x 260 mm, 2 RU
Weight	approx. 4,4 kg

## VLM-100 A | for all-call

### Description

Microphone-station (condenser) for announcements in pre-selected zones with pre-chime and priority-switch through RJ45-jack.



Microphone station ..... **VLM-100A**  
digital, for MXA-4120A or MXP-604A

## MXM-104 | for 4 zones

### Description

Digital microphone-station to select the 4 individual speaker circuits. Status indicator with LED for zones, busy, talk, signal, power, and microphone-failure.



Microphone station ..... **MXM-104**  
for remote control of 4 speaker zones and "all-call".  
Microphone station ..... **MXM-104WO**  
as MXM-104 but without interface RR-40

# 4-CHANNEL MATRIX PRE-AMPLIFIER

# RCS

6 IN - 4 OUT

MATRIX



## Description

The MXP-604 Matrix Amplifier offers the opportunity to dispose up to six different input signals in any order on to four separate speaker zones through the **integrated 6- in 4 Matrix**.

This Matrix amplifier offers a special feature. Digital microphone stations **MXM-104** and **VLM-100A** as well as commercial microphone- and line signals can be connected to the device.

Please consider the following features:

- Inputs 1-4 have to be set to MIC or LINE and have Gain-Control as well as shiftable phantom-power; The inputs always have priority in comparison to inputs 5 & 6 (LINE).
- Inputs 1-4 (MIC/LINE) are provided with a combo-socket, inputs 5 -6 (LINE) with a cinch-socket.
- All inputs have volume-, treble- and bass control, a signal LED and a switch for zone selection
- PAGING-input on screw-connectors for announcement signals (Tel.-Paging) with highest priority.
- Contacts to initiate the integrated chimes (2-or 4 sounded) prior to announcements for inputs 1 – 4.
- Switch to select the zones for announcement of the microphone station VLM-100A and volume control.
- Recording-/monitoring output (cinch/jack socket) with selectable recording zone and volume control.
- LED-level indicator and volume control for four outputs.

- Amplifier works with line current (230 V) or DC-24V (emergency power).

★

## Model designation

**4-Channel Matrix Pre-Amplifier, ..... MXP-604 A**  
(6 IN / 4 OUT), 2 RU

## VLM-100 A | for all-call

Microphone-station (condenser) for announcements in pre-selected zones with pre-chime and priority-switch through RJ45-jack.



**Microphone station.....VLM-100A**  
digital, for MXA-4120A

## MXM-104 | for 4 zones

Digital microphone-station to select the 4 individual speaker circuits. Status indicator with LED for zones, busy, talk, signal, power, and microphone-failure.



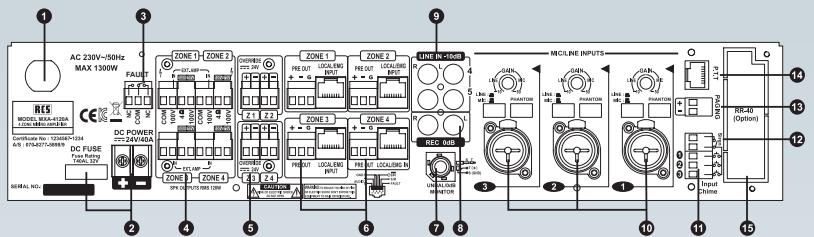
**Microphone station.....MXM-104**  
for remote control of 4 speaker zones and "all-call".  
**Microphone station.....MXM-104 WO**  
as MXM-104 but without interface RR-40

## MXE-400 W | incl. text memory

Wall-microphone station with hand-microphone as well as built-in digital text memory to save announcements with a max. duration of 60 sec.



**Wall-microphone station....MXE-400W**  
incl. text memory max. 60 s



- ① AC-power supply connection cable
- ② DC-power supply connector (24V DC)
- ③ FAULT, Fault relay
- ④ 100V and 70 V speaker outputs, separated into 4 individually controllable circuits
- ⑤ 24V DC V/R priority output
- ⑥ LINE 1-4 PRE-OUT and alarm signal input
- ⑦ Monitoring, jack 6,3 mm
- ⑧ REC Out, 0dB, Cinch
- ⑨ Line 4-5 input, cinch
- ⑩ MIC/LINE inputs 1-3
- ⑪ Contact to remote control chime
- ⑫ Contact to remote control siren
- ⑬ PAGING input
- ⑭ Port for VLM-100A microphone station
- ⑮ Port for receiver-module RR-40 (optional), to connect speaker microphone MXM-104

Technical data	MXA-4120 A
Frequency range	4x 120 W RMS (max. 4x 180W)
THD	45 Hz – 20.000 Hz (-3dB)
Noise level	better than 0,3% at 1 kHz
Cross Talk	MIC: better than 75dB; LINE: better than 90dB
Inputs	MIC/LINE 1-3: -50 dBu (2.45 mV), 5 kohms, balanced MIC/LINE 1-3: -10 dBu (245 mV), 15 kohms, balanced LINE 4-5: -10 dBu (245 mV), 15 kohms, balanced PAGING: -10 dBu (245 mV), 10 kohms, balanced
Outputs	REC OUT: 0 dBu (775 mV), 3 kohms, unbalanced MONITOR: 0 dBu (775 mV), 200 ohms, unbalanced FAULT: relay with switching contact, 24 V max. 500 mA 24 V EMER. OUT: 24 V DC 200 mA for priority relays
Speaker outputs	100V or 70 V and low impedance 4 ohms
Power supply	230 V mains power (50/60 Hz) or 24 V DC (emergency power supply)
Power consumption	1317 W – 1/8: 3,28 A – rated: 7,16 A
Dimensions (WxHxD)	483 x 88 x 352 mm, 2 RU
Weight	approx. 22 kg

# 4-CHANNEL MATRIX AMPLIFIER

# RCS

MXA-4120A  
**480 W**  
4x 120 W

5 IN - 4 OUT

MATRIX



## Description

The MXA-4120 A ist a very compact Matrix-Amplifier. The MXA-4120 A offers the opportunity to spread up to five different input-signals randomly on to four separate speaker zones through the **integrated 5-in-4 matrix**. Each of the four zones is supplied by their own integrated 100V-power amplifier (4x 120 Watt).

Any commercial microphone can be connected to this matrix amplifier, but especially the microphone stations **VLM-100 A**, **MXM-104** as well as **MXE-400 W**.

Please consider the following features:

- Inputs 1-3 are switchable to MIC or LINE and have Gain-Control as well as shiftable phantom-power; The inputs always have priority in comparison to inputs 4 and 5 (LINE-IN).
- Inputs 1-3 (MIC/LINE) are provided with a combo-socket, inputs 4 - 5 (LINE) with a cinch-socket.
- Volume-, treble- and bass control separate for all five inputs.
- PAGING-input on screw-connectors for announcement signals (Tel.-Paging) with highest priority.
- Contacts to initiate the integrated chimes (2-or 4 sounded) prior to announcements for inputs 1 - 3, as well as siren (all-call).
- Switch to select the zones for announcement of the microphone station VLM-100A.
- Up to four emergency-microphone-stations MXE-400 W can be connected (one microphone station for each zone).
- Integrated control-speaker, with zone selection and volume control.

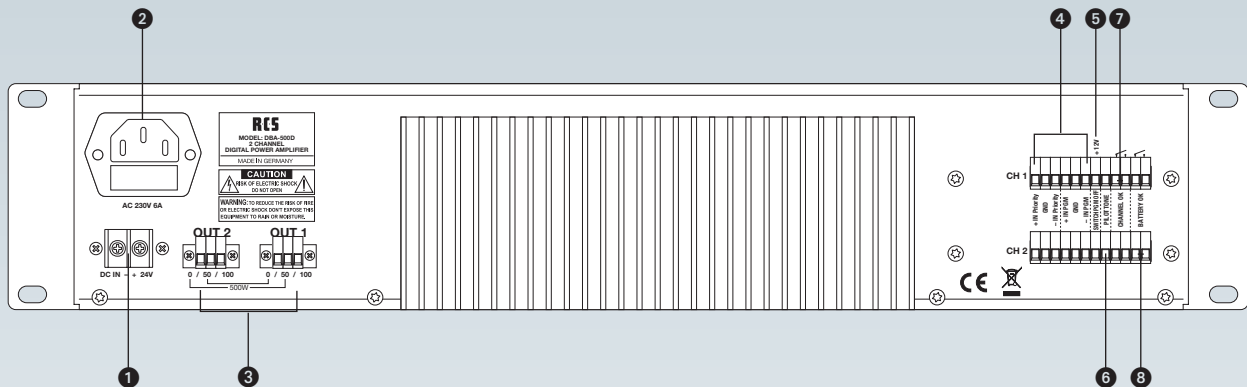
- A fault-indicator output (changeover-contact) signals device-failure /device-error.
- Amplifier works with line current (230 V) or DC-24V (emergency power).

★

## Model designations

**4-Channel Matrix-Amplifier, 480W** ..... **MXA-4120 A**  
4x 120W, (5 IN / 4 OUT), 2 RU

## Rear view



- ❶ DC-power supply terminal 24 V
- ❷ IEC power inlet (cold condition)
- ❸ Speaker outputs 50 and 100V at DBA-500D for 500 W operation - Output 1 and 2 turn into series
- ❹ Balanced inputs, at 500 W operation (DBA-500D) actuate Input 1 and 2 combined
- ❺ Switch PGM OFF: Turns off the program input and activates the Priority input
- ❻ Input for pilot tone signal
- ❼ Failure indication output if notice of malfunction or defect of the amplifier
- ❽ Failure indication output if emergency power supply is missing

Technical data	DBA-250 D	DBA-500 D
Output power	375W/250 W (program/RMS)	750W/500 W (program/RMS) or 2x375W/2x250 W (program/RMS)
Input sensitivity	1V, 10 kohms, balanced	
Output voltage	50 V or 100V	
Frequency range	70 ~ 20.000 Hz (better than -3 dB)	
Signal-to-noise-ratio	better than 91 dB	
THD at 1 kHz	better than 0,29%	better than 0,2%
External voltage distance	85 dB 1kHz	
Power consumption	Sine signal-380 W, no-load-18 W, standby 7 W	Sine signal-770 W, no-load-35 W, standby 9 W
Current consumption (230 V AC)	Sine signal-1,7 A, active 0 W Out-0,09 A, standby-0,034 A	Sine signal-4 A, active 0 W Out-0,15 A, standby-0,048 A
Current consumption (24 V DC)	Sine signal-14 A, active 0 W Out-0,3 A, standby-0,06 A	Sine signal-27 A, active 0 W Out-0,5 A, standby-0,12 A
AC power supply	230 V AC, 50 – 60 Hz	
DC power supply	24 V DC (emergency power supply)	
Dimensions (WxHxD)	483 x 88 x 256; 2 RU	
Weight	approx. 13,8 kg	approx. 16,2 kg

# DIGITAL 100V POWER AMPLIFIER

WITH SYSTEM EN 54-16 CERTIFIED

# RCS

DBA-250D  
**250 W**

DBA-500D  
**500 W**



Digital 100V Power Amplifier according to IEC 268-5  
with over 90% degree of efficiency



## Description

With this **digital 100V Power Amplifier** we do contribute to the protection of our climate and therefore the protection of our natural habitat. This device uses energy in a sensible manner and is part of an advanced technology development.

The advantages of digital power amplifiers can be found regarding a much improved degree of efficiency of over 90% compared to other analogue amplifiers with approx. 70%.

The out come of that the lost heat is way less, which is positive for the durability of the amplifiers and also for the complexity of the cooling of 19" racks. An additional cooling of the technics room is not necessary.

Please consider the following features:

- Pilot tone inputs and malfunction message contacts for emergency power and the power amplifier predestine this amplifier for 100V technology according to **VDE 0828/IEC 50849**.
- In case no signal is present, the amplifier automatically switches to standby and then only spends **9.9 VA**, if the signal is pending, e.g. in case of an emergency the amplifier will be ready for operation within 30 ms.
- These amplifiers are manufactured according to the latest assembly methods with high-quality components and are therefore perfectly suitable for professional continuous operation in 100V alarming systems.
- The battery capacity for emergency power operation is notably less than with analogue amplifiers.
- Output power and protection circuits according to IEC-268-5
- The LED indicators on the front panel give information on important signal and operation status.

- Cooling takes place maintenance free without ventilation, which means that there will be no pollution and no follow-up costs. This device is therefore especially suitable for noise sensitive environments (offices, churches, conference rooms, etc.).
- Special protective circuits preventing engine idling, short circuit, over heating and an input delay are a matter of course.
- Other distinctive features: low installation depth of only 260 mm and countersunk volume controls.
- The devices have loudspeaker outputs and symmetrical inputs on screw-type connectors, whereby the wiring complexity is reduced significantly.
- The inputs can be optionally equipped with input transformers. In this case please order as option the TSE-203.

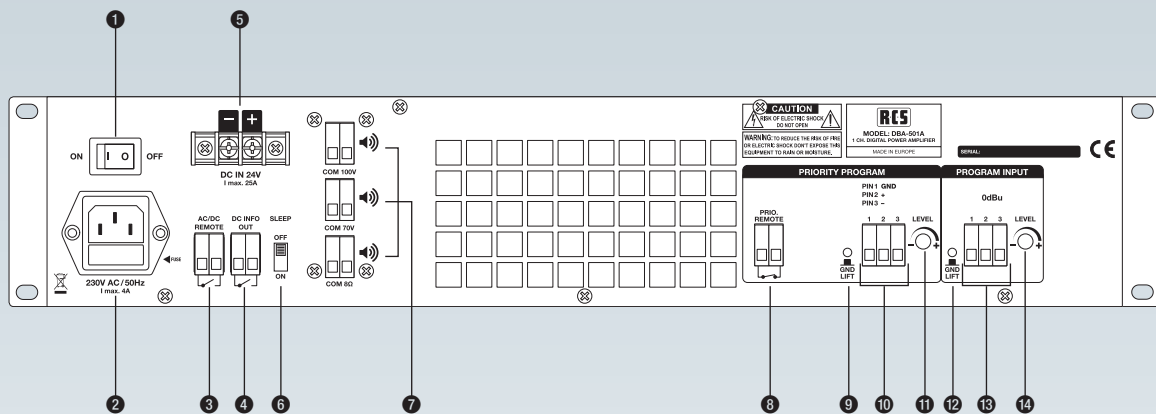
★

- + Degree of efficiency of over 90%
- + Energy saving
- + Automatic standby mode
- + Low heat waste
- + Low battery capacity necessary

## Model designations

- 1-Channel Power Amplifier**, ..... **DBA-250D**  
250 W RMS, (2 RU)
- 1- or 2-Channel Power Amplifier**, ..... **DBA-500D**  
500 W or 2x 250 W RMS, (2 RU)
- Transformer-balanced input** ..... **TSE-203**

## Rear view



- 1 On-off switch
- 2 IEC power connector AC 230V with voltage fuse
- 3 AC/DC remote for external remote control of the amplifier
- 4 Control contact for 24 V DC voltage
- 5 DC power supply terminal 24 V with internal fuse 30 A
- 6 Sleep function switch
- 7 High and low impedance speaker outputs (100V, 70V and 8Ω)
- 8 Priority by potential-free contact
- 9 Ground / Lift switch
- 10 Transformer balanced audio input for priority-signal input (eg emergency signal, emergency announcements, etc.)
- 11 Volume control for priority signal
- 12 Ground / Lift switch
- 13 Transformer-balanced audio input for program signal input (LINE level)
- 14 Volume control for program signal

Technical data	DBA-501 A
Output power	720 W (program) / 500 W sine according to IEC 268-3
Speaker outputs, groundless	100V (20 ohms); 70V (10 ohms); 8Ω (65V)
Frequency range	50 ~ 25.000 Hz (-3 dB)
Signal-to-noise-ratio	better than 91 dB
THD at 1 kHz	better than 0,7%
Priority Input (LINE)	transformer balanced, LINE 0V – 3V, 0 dB
Program Input (LINE)	transformer balanced, LINE 0V – 3V, 0 dB
External voltage distance	97 dB 1kHz
Protection circuit	according to IEC 268-3
Power consumption	230V AC: I max. 4 A (180 mA) 24V DC: I max. 25 A (550 mA); Sleep: 120mA
AC power supply	230V AC, 50 – 60 Hz
DC power supply	24V DC (emergency power supply)
Dimensions (WxHxD)	483 x 88 x 355 mm; 2 RU
Weight	approx. 17 kg

# DIGITAL 100V POWER AMPLIFIER

IEC 50849

# RCS

DBA-501 A  
**500 W**

**Digital 100V Power Amplifier according to IEC 268-3  
with over 90% degree of efficiency**



## Description

With this single-channel **digital 100V Power Amplifier** we do contribute to the protection of our climate and therefore the protection of our natural habitat. This device uses energy in a sensible manner and is part of an advanced technology development.

The advantages of digital power amplifiers can be found regarding a much improved degree of efficiency of over 90% compared to other analogue amplifiers with approx. 70%.

The out come of that the lost heat is way less, which is positive for the durability of the amplifiers and also for the complexity of the cooling of 19" racks. An additional cooling of the technics room is not necessary.

Please consider the following features:

- The amplifier is designed for mains operation and 24V emergency power operation and thereby for 100V technology according to **VDE 0828 / IEC 50849**.
- These amplifiers are manufactured according to the latest assembly methods with high-quality components and are therefore perfectly suitable for professional continuous operation in 100V alarming systems.
- In emergency operation the sleep function reduces the power consumption of connected 24V batteries.
- The battery capacity required thereby is significantly lower than with analogue amplifiers.
- Special protective circuits preventing engine idling, short circuit, over heating and an input delay are a matter of course.
- The LED indicators on the front panel give information on important signal and operation status.

- Output power and protection circuits according to IEC-268-3.
- The devices have loudspeaker outputs and symmetrical inputs on screw-type connectors, whereby the wiring complexity is reduced significantly.
- A thermoelectric controlled fan (switches on only if Sine full load briefly) promote efficient cooling of the amplifier so that overheating never occurs.
- AC/DC Power Remote allows to switch on the device via a potential-free closer.
- A priority input with alarm contact and volume control allows obligatory call.
- In addition to the 100V and 70V output, the amplifier with an 8 ohms output.

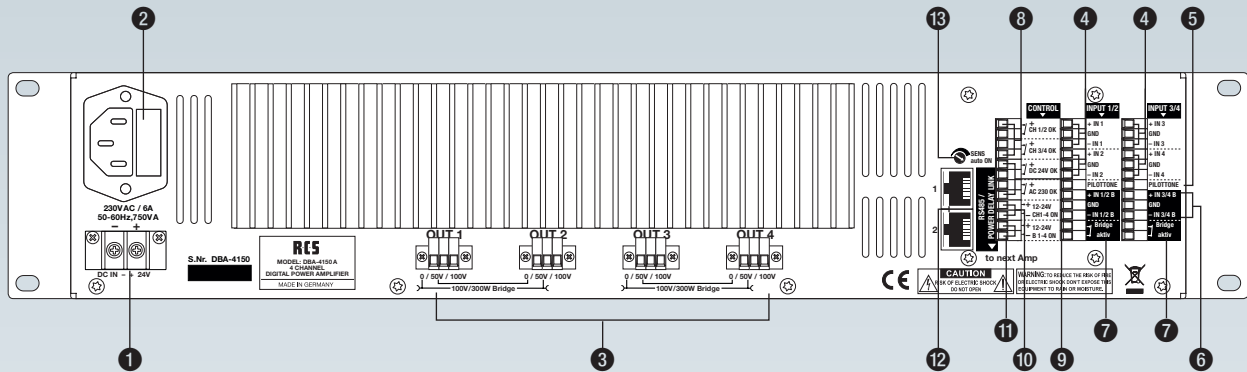
★

- + Degree of efficiency of over 90%
- + Energy saving
- + Sleep function in emergency power operation
- + Low heat waste
- + Low battery capacity necessary

## Model designation

**1-Channel Power Amplifier, ..... DBA-501 A**  
500 W RMS, (2 RU)

## Rear view



- ① DC power supply terminal 24V
- ② mains power connector
- ③ speaker outputs 50 and 100 V for 300 W operation, connect outputs 1 and 2 or 3 and 4 in series (only 50V connections)
- ④ symmetrical inputs (input), for 300 W operation, control inputs 1 + 2 and 3 + 4 together.
- ⑤ input for pilot tone signal
- ⑥ Balanced inputs (Bridge) Priority inputs for channel 1 + 2 resp. 3 + 4
- ⑦ Bridge active - contact activates the priority input (bridge) and mutes the input inputs.
- ⑧ Fault message output in case of defect or malfunction of the output stage
- ⑨ Fault message output in the absence of emergency power supply voltage
- ⑩ Remote contact IN 1 - IN 4 for switching on the amplifier inputs IN 1 - IN 4 with 12-24V DC
- ⑪ Remote contact IN 1 / 2B - IN 3 / 4B for switching on the priority inputs IN 1 / 2B - IN 3 / 4B with 12-24V DC.
- ⑫ RS485 / Power Delay Link
- ⑬ Setting the threshold for signal detection

Technical data	DBA-4150 A
Output power (program/RMS)	2x 450/300 W or 4x 225/150 W
Input sensitivity	1 V, 10 kohms, balanced
Output voltage	50 V or 100 V
Frequency range	140 - 24.000 Hz (better than -3 dB)
Signal to Noise Ratio	better than 91 dB
Harmonic distortion (THD)	better than 0,2 %
Fremdspannungsabstand	85 dB 1kHz
Power consumption	Sine signal: 730 W, no-load: 21 W, Standby: 10 W
Current consumption (230 V AC)	Sine signal: 3.7 A, Active: 0 W, Out: -0.08 A, Standby: 0.05 A
Current consumption (24 V DC)	Sinewave signal: 27 A, Active: 0 W, Out: -0.5 A, Standby: 0.14 A
Power supply AC	230 V AC, 50 - 60 Hz
Power supply DC	24 V DC (emergency power)
Dimensions (WxHxD)	483 x 88 x 260 mm; 2 RU
Weight	18,5 kg

# DIGITAL 100 V AMPLIFIER

# RCS

DBA-4150 A
<b>600 W</b>
4x 150 W
2x 300 W



Digital 100V Power Amplifier according to IEC 268-5 with over 90% degree of efficiency



## Description

With this digital 100V Amplifier we do contribute to the protection of our climate and therefore the protection of our natural habitat.

The advantages of digital power amplifiers can be found regarding a much improved degree of efficiency of over 90% compared to other analogue amplifiers with approx. 70%

The outcome of that the lost heat is way less, which is positive for the durability of the amplifiers and also for the complexity of the cooling of 19" racks. An additional cooling of the technics room is not necessary.

Please consider the following features:

- Pilot tone inputs and malfunction message contacts for emergency power and the power amplifier predestine this amplifier for 100 V technology according to VDE 0828/IEC 50849.
- In case of no signal is present, the amplifier automatically switches to standby and then only spends 9.9 VA, if the signal is pending, e.g. in case of an emergency the amplifier will be ready for operation within 30 ms.
- These amplifiers are manufactured according to the latest assembly methods with high-quality components and are therefore perfectly suitable for professional continuous operation in 100 V alarming systems.
- The battery capacity for emergency power operation is notably less than with analogue amplifiers.
- Output power and protection circuits according to IEC-268-5
- The LED indicators on the front panel give information on important signal and operation status.

- Cooling takes place maintenance free without ventilation, which means that there will be no pollution and no follow up costs. This device is therefore especially suitable for noise sensitive environments (offices, churches, conference rooms, etc.).
- Special protective circuits preventing engine idling, short circuit, overheating and an input delay are a matter of course.
- Other distinctive features: low installation depth of only 260 mm and countersunk volume controls.
- The devices have loudspeaker outputs and symmetrical inputs on screw-type connectors, whereby the wiring complexity is reduced significantly.
- Compliant with the standard EN 54-16.

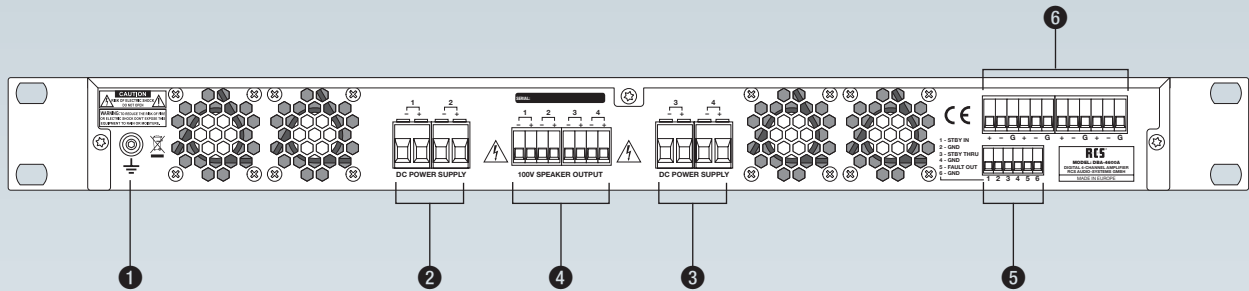
★

- + Degree of efficiency of over 90%
- + Energy saving
- + Automatic standby mode
- + Low heat waste
- + Low battery capacity necessary

## Model designation

2- or 4-Channel Power Amplifier ..... **DBA-4150 A**  
2x 300 W or 4x 150 W RMS, (2 RU)

## Rear view



- ① ground connection
- ② DC power supply terminal 24 V DC for channel 1 and 2
- ③ DC power supply terminal 24 V DC for channel 3 and 4
- ④ speaker outputs, 100 V for channels 1 - 4
- ⑤ Stand-by active, error output
- ⑥ 4x LF input (4 balanced audio inputs for program signal feed)

Technical data	DBA-4600 A
Output power	4x 750/600 W (program/RMS)
Speaker outputs, floating	700 mV, 0 dB
Output voltage	100 V
Frequency range	60 - 25.000 Hz
Signal to Noise Ratio	89 dB
Harmonic distortion (THD)	0,14 %
Protection circuit	according to IEC 268-3
Power consumption (gesamt)	2500 W
Current consumption (gesamt)	24 V DC: I max. 4x25 A; Sleep: 0,56 A
Power supply DC	24 V DC
Dimensions (WxHxD)	483 x 44 x 327; 1 RU
Weight	6,9 kg

# DIGITAL 100 V AMPLIFIER

# RCS

DBA-4600 A  
**2400 W**  
4x 600 W

MADE IN EUROPE

Digital 100V Power Amplifier according to IEC 268-5 with over 90% degree of efficiency

**NEW**



## Description

The DBA-4600 A Digital Power Amplifier provide 4 separate amplifier channels, in each case each 600W of power at 100V in a 1RU package. Each input can be assigned its own NF signal.

The power amplifier feature floating 100V direct outputs without the need for an output transformer. Each power amp channel has its own power supply of 24V DC, so only one channel is affected by a power supply failure.

Corresponding protection circuits ensure that each amplifier channel is protected against thermal overload, DC voltage, a short and HF interference.

Through appropriate control inputs, the power amplifier can be switched to an active standby mode. As a result, the power amplifier has an efficiency of over 90%. The device has an output contact for error messages.

For optical control, several LEDs are available, which inform about the pending signal, the Protect circuit or the supply of voltage.

Please consider the following features:

- Specially designed for the PA area.
- Each output has a continuous power of 600 W at 100 V.
- Each power amp channel has a separate 24V DC input.
- Manufactured to the latest European standards and compliant with EN 50849 and EN 54-16.
- Special protection circuits against no load, short circuit, excessive temperature and a switch-on delay.

- Active standby circuit for low power consumption.
- Error output via potential-free contact.
- Low height with only 1 RU.
- The front LEDs indicates important signal and operating conditions.
- Output power and Protection circuits according to IEC 268-3.
- Active cooling by thermostat-controlled fans (only switches on briefly with full-scale sine-wave operation).

★

- + Degree of efficiency of over 90%
- + Energy saving
- + Automatic standby mode
- + Low heat waste
- + Low battery capacity necessary

## Model designation

**4-Channel Power Amplifier**..... **DBA-4600 A**  
4x 600 W RMS, (1 RU)

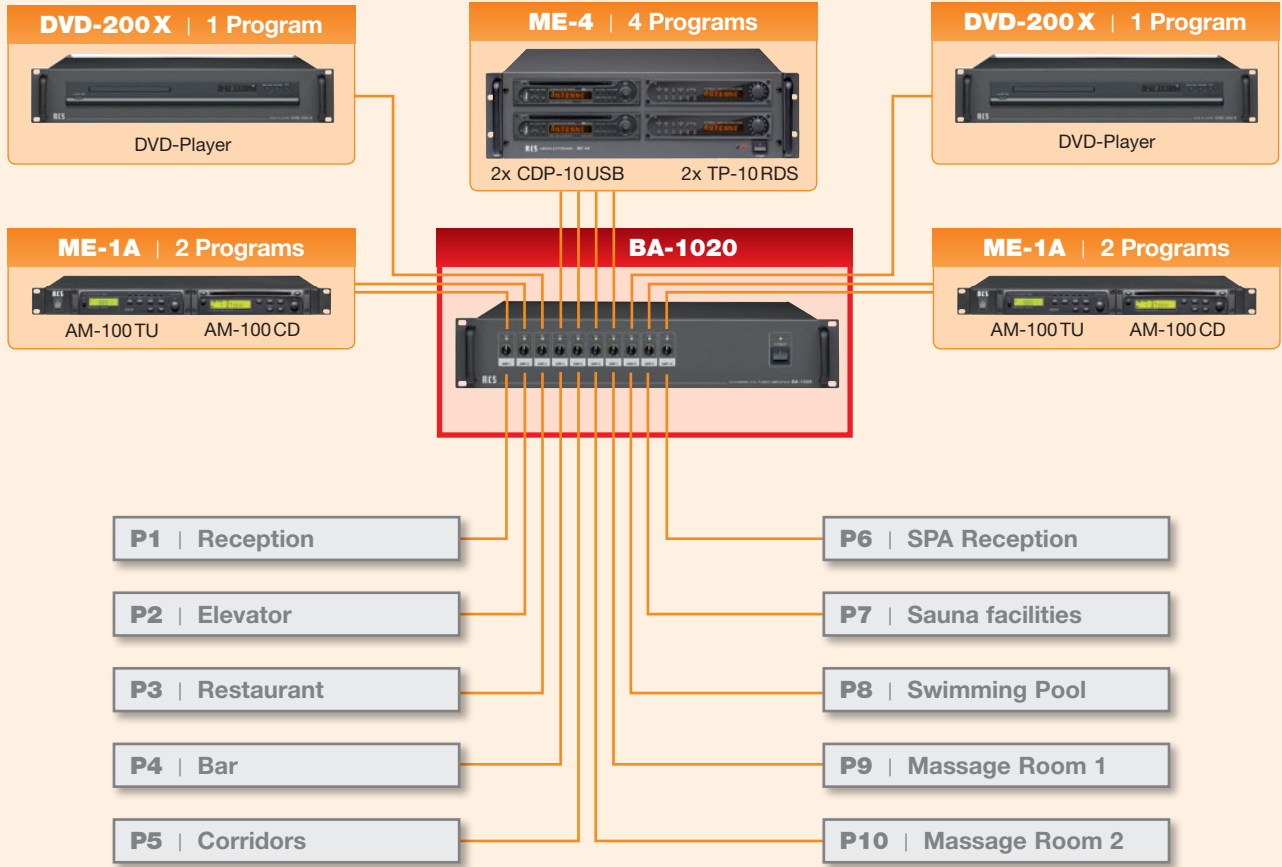
**Schaltnetzteil, 24V DC**, 30 A for DBA-4600A ..... **DPS-720/24**

**Note:** There are 4 power supplies (1 power supply per channel) required!

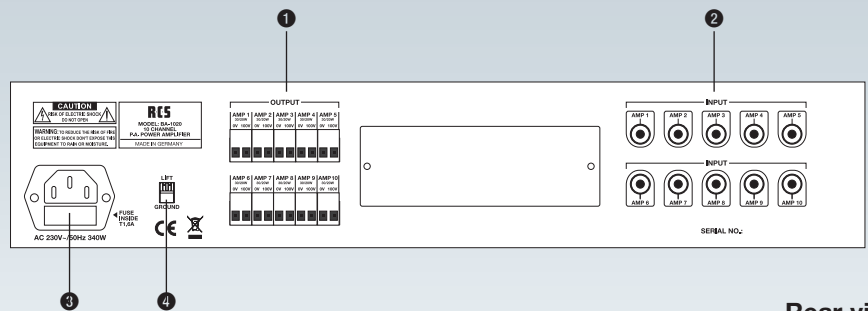
**EXAMPLE OF USE** | Hotel with SPA area

**BA-1020**

simultaneously 10 different programs available



- 1 Screw-type connectors for speaker outputs 100V (50V factory switchable)
- 2 Cinch socket inputs 1-10
- 3 AC power inlet (cold condition)
- 4 Ground / Lift switch



**Rear view**

Technical data	BA-1020
Output power	10x 30/20 W (Program/RMS)
Input sensitivity	10x 0 dB (0,775 V), 10 kohms, unbalanced
Output voltage/impedance	10x 100V
Frequency range	10x 30 ~ 20.000 Hz (better -3 dB)
Signal-to-noise ratio	10x better than 100 dB
THD at 1 kHz	10x better than 1%
Current consumption	17 VA (no-load) / 340 VA (full-load)
Power supply AC	230 V, 50 – 60 Hz
Dimensions (WxHxD)	483 x 88 x 440 mm; 2 RU
Weight	approx. 12,5 kg

# 10-CHANNEL POWER AMPLIFIER (100V, 50 V)

# RCS

BA-1020  
**200 W**  
10x 20 W

 **MADE IN GERMANY**



## Description

This 10-Channel 19" Power Amplifier (2 RU) is perfectly suitable for professional usage for multichannel 100V systems and 100V application techniques (50 V factory switchable), e.g. solariums, sauna facilities, thermal springs, etc.

Due to fanless cooling, this device is especially suitable for soundless environment requirements.

The 10-Channel Power Amplifier has a very low induction toroidal transformer.

The most modern manufacturing methods with high quality components ensure a high service life.

These 10-Channel Power Amplifiers are absolutely short circuit and engine idling proof with all relevant safety arrangements. They are therefore especially appropriate for continuous operation.

Please consider the following features:

- Each of these Amplifiers of this series has 10 unsymmetrical audio inputs for the program.
- This device has over 10 high-quality output transmitters, which are designed for phoenix screw-type connectors.
- The screw-type connectors substantially facilitate the wiring for signal input. Time consuming fitting of cables with XLR connectors is eliminated.
- The LED indicators attached on the front panel of the device give ongoing information regarding the initial gauge of the particular Amplifier.
- The input signals may be regulated exactly via ten level controls, which are attached on the rear panel.

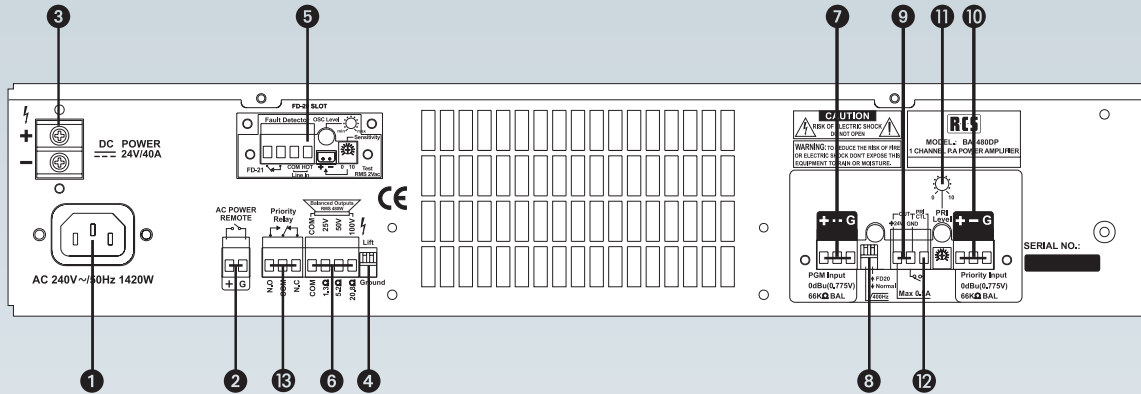
- The device is equipped with a „SOFT-START“ mode (net switch on limitation).
- A ground/lift switch used to separate the connection of frame ground / signal ground (screening) helps to avoid hum loops.

★

## Model designations

**10-Channel Power Amplifier,..... BA-1020**  
10x 20 W RMS, (2 RU)

## Rear view



- 1 IEC power inlet (cold condition)
- 2 Remote switch-on via „Power Remote“
- 3 24 V DC power supply terminal
- 4 Groundlift switch
- 5 Integrated pilot tone-module FD-21 (optional)
- 6 Speaker outputs, 25 V, 50 V and 100 V
- 7 Input on screw-type connectors

- 8 Switches for high-pass filter (400 Hz) and FD-21 module
- 9 24 V (500 mA) output for switching external relays or similar units
- 10 Balanced input for priority signal
- 11 Volume control for priority signal
- 12 Contact for priority enable
- 13 Change-over contact for priority

Technical data	BA-120 DP	BA-240 DP	BA-480 DP
Output power	120 W (RMS)	240 W (RMS)	480 W (RMS)
Input sensitivity	0 dB (0,775 V), 66 kohms, balanced.	0 dB (0,775 V), 66 kohms, balanced.	0 dB (0,775 V), 66 kohms, balanced.
Output impedance	25 V, 50 V, 100 V	25 V, 50 V, 100 V	25 V, 50 V, 100 V
Frequency range	35 ~ 20.000 Hz (better than -3 dB)	35 ~ 20.000 Hz (better than -3 dB)	35 ~ 20.000 Hz (better than -3 dB)
Signal-to-noise-ratio	better than 100 dB	better than 100 dB	better than 100 dB
THD at 1 kHz	better than 0,5%	better than 0,5%	better than 0,5 %
Input filter	400 Hz / -3 dB	400 Hz / -3 dB	400 Hz / -3 dB
Power consumption	328 W	735 W	1420 W
Current consumption (230 V)	0,77 A at 1/8 power current draw 1,77 A at rated power current draw	1,6 A at 1/8 power current draw 3,75 A at rated power current draw	3,1 A az 1/8 power current draw 7,4 A at rated power current draw
AC power supply	230 V, 50 – 60 Hz	230 V, 50 – 60 Hz	230 V, 50 – 60 Hz
DC power supply	24 V (emergency power supply)	24 V (emergency power supply)	24 V (emergency power supply)
Dimensions (WxHxD)	483 x 88 x 374; 2 RU	483 x 88 x 374; 2 RU	483 x 88 x 374; 2 RU
Weight	approx. 12,5 kg	approx. 14,5 kg	approx. 18,5 kg

## OPTIONAL | Pilot Tone-Module

**FD-21**

### Description

This pilot tone-module serves to monitor the performance of amplifiers. It is installed in the slot provided on power amplifiers of the „DP“ series. The generator produces a 20 kHz test signal. Apart from the test of the power amplifier functioning, the speaker line is checked for short circuit faults.

Evaluation and switching to a backup amplifier is performed by the FS-381 amplifier switcher.



**Pilot Tone-Module** for power amplifiers of the „DP“ series. . . . . **FD-21**

# 1-CHANNEL POWER AMPLIFIER WITH PILOT TONE



BA-120 DP  
**120 W**

BA-240 DP  
**240 W**

BA-480 D  
**480 W**

Balanced inputs for programs, **priority** and **pilot tone-module**



## Description

These 19" 1-channel power amplifiers are **fully monitored** and ideal for the use in professional audio applications with 100 V, 70 V and 25 V line systems.

The devices are manufactured in state-of-the-art production processes using high-quality components such as toroidal transformers.

They have been designed for continuous operation. They are absolutely short circuit and open circuit proof and are equipped with all relevant protection devices.

Please consider the following features:

- All the amplifiers of the „DP“ series have one electronically balanced audio input for programs and one input (with **priority**) for priority announcements, etc.
- Each power amplifier can be equipped with 1 **pilot tone-module** (FD-21) which monitors the performance of the amplifier.
- The amplifiers have electronically balanced inputs and outputs on screw-type connectors. Possible hum pick-up from ground loops is avoided through the balanced inputs and outputs.
- The screw-type connectors substantially facilitate the wiring for signal input. Time consuming fitting of the input cables with XLR connectors is eliminated.
- The multicoloured LED indicators located on the front panel continuously indicate the operating status of the amplifier including protection functions and possible dangers.

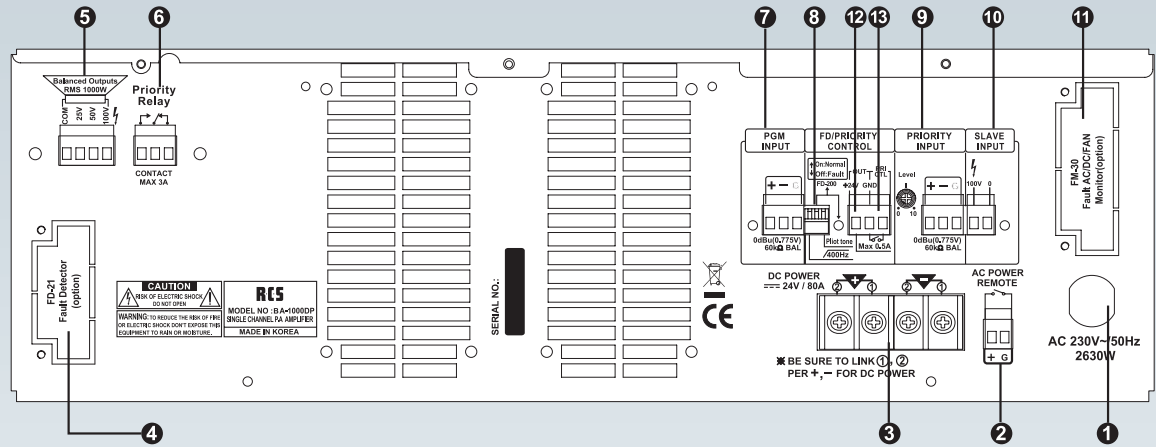
- By means of a „Power Remote“ contact the amplifier can be switched on, even if the power switch is in the off position
- All models feature soft start and a special circuit which suppresses unpleasant switch-on noise.
- A groundlift switch is provided to disconnect signal ground from chassis ground (shielding), in order to avoid any hum pick-up.

★

## Model designations

<b>1-Channel Power Amplifier,</b> .....	<b>BA-120 DP</b>
120 W RMS, 2 RU, prepared for FD-21	
<b>1-Channel Power Amplifier,</b> .....	<b>BA-240 DP</b>
240 W RMS, 2 RU, prepared for FD-21	
<b>1-Channel Power Amplifier,</b> .....	<b>BA-480 DP</b>
480 W RMS, 2 RU, prepared for FD-21	

## Rear view



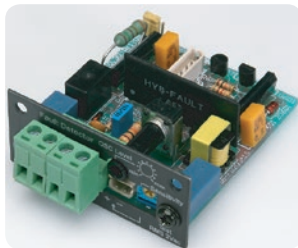
- 1 IEC power inlet (cold condition)
- 2 Remote switch-on via „Power Remote“
- 3 24 V DC power supply terminal
- 4 Slot for pilot tone-module FD-21 (optional)
- 5 Speaker outputs, 25 V, 50 V and 100 V
- 6 Change-over contact for priority
- 7 Input on screw-type connectors
- 8 Switches for high-pass filter (400 Hz) and FD-21 module
- 9 Balanced input for priority signal
- 10 Input for 100V speaker signal
- 11 Slot for Error Monitoring-Module FM-30 (optional)
- 12 24 V (500 mA) output for switching external relays or similar units
- 13 Contact for priority enable

Technical data	BA-720 DP	BA-1000 DP
Output power	1x 720 W (RMS)	1x 1.000 W (RMS)
Input sensitivity	0 dB (0,775 V), 60 kohms, balanced	
Output impedance	25 V, 50 V, 100 V	
Frequency range	35 ~ 20.000 Hz (better than -3 dB)	
Signal-to-noise-ratio	better than 100 dB	
THD at 1 kHz	better than 0,4%	
Input filter	400 Hz / -3 dB	
Power consumption	1.890 W	2.630 W
Current consumption (230 V)	3,8 A at 1/8 power current draw 9,0 A at 1/1 rated power current draw	5,4 A at 1/8 power current draw 12,0 A at 1/1 rated power current draw
AC power supply	220-230 V, 50 ~ 60 Hz	
DC power supply	24 V (emergency power supply)	
Dimensions (WxHxD)	483 x 133 x 374 mm; 3 RU	
Weight	approx. 22 kg	approx. 27 kg

### OPTIONAL | Pilotone-Module **FD-21**

#### Description

This Pilotone-Module serves to monitor the performance of amplifiers. The generator produces a 20 kHz test signal. Apart from the test of the power amplifier functioning, the speaker line is checked for short circuit faults.

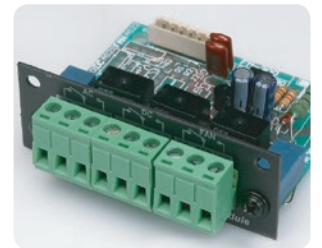


**Pilotone-Module** ..... **FD-21**  
Extension-Module for the „DP“ series

### OPTIONAL | Error Monitoring-Module **FM-30**

#### Description

The Error Monitoring-Module has three potential-free Relay contacts (NO/NC). Fault monitoring is operating if AC- or DC-fuse is blown and if AC- or DC-power is off or disconnected. Also the module reacts when fan fault or fan is disconnected.



**Error Monitoring-Module** ..... **FM-30**  
Extension-Module for the „DP“ series

# 1-CHANNEL POWER AMPLIFIER WITH PILOT TONE



BA-720 DP  
**720 W**

BA-1000 DP  
**1000 W**

Balanced inputs for programs, **priority** and **pilot tone-module**



## Description

These 19" 1-channel power amplifiers are **fully monitored** and ideal for the use in professional audio applications with 100 V, 70 V and 25 V line systems.

The amplifiers have malfunction message contacts for all relevant functions in case of emergency.

The devices are manufactured in state-of-the-art production processes using high-quality components such as toroidal transformers.

They have been designed for continuous operation. They are absolutely short circuit and open circuit proof and are equipped with all relevant protection devices.

Please consider the following features:

- All the amplifiers of the „DP“ series have one electronically balanced audio input for programs and one input (with **priority**) for priority announcements, etc.
- Each power amplifier can be equipped with 1 **pilot tone-module** (FD-21) which monitors the performance of the amplifier.
- The amplifiers have electronically balanced inputs and outputs on screw-type connectors. Possible hum pick-up from ground loops is avoided through the balanced inputs and outputs.
- The screw-type connectors substantially facilitate the wiring for signal input. Time consuming fitting of the input cables with XLR connectors is eliminated.
- By means of a „Power Remote“ contact the amplifier can be switched on, even if the power switch is in the off position.

- The multicoloured LED indicators located on the front panel continuously indicate the operating status of the amplifier including protection functions and possible dangers.
- All models feature soft start and a special circuit which suppresses unpleasant switch-on noise.

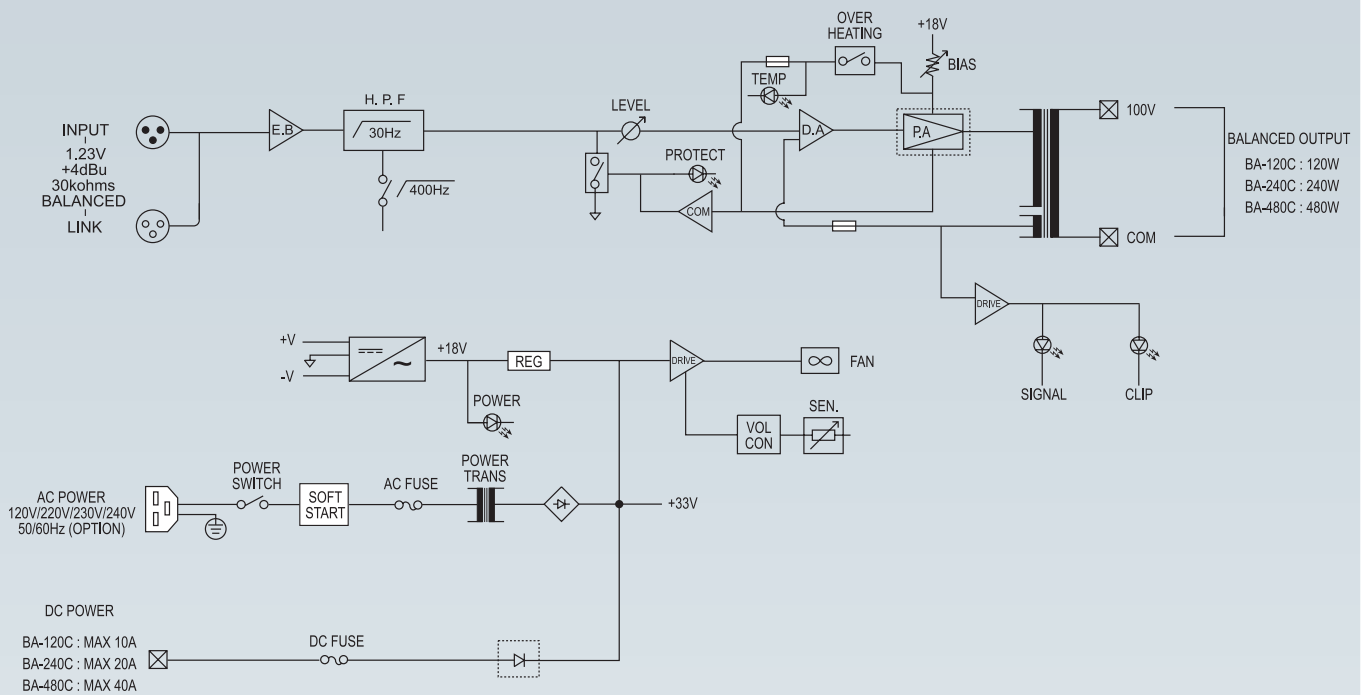
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## Model designations

**1-Channel Power Amplifier**, ..... **BA-720 DP**  
1x 720 W RMS, 3 RU, prepared for FD-21 and FM-30

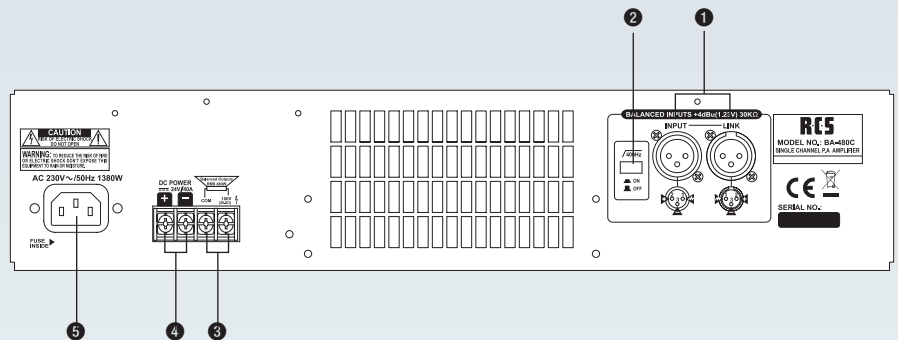
**1-Channel Power Amplifier**, ..... **BA-1000 DP**  
1x 1.000 W RMS, 3 RU, prepared for FD-21 and FM-30

## Block diagram



## Rear view

- 1 Input on XLR-sockets
- 2 Switch for high-pass filter 400 Hz
- 3 Screw-type connectors speaker outputs
- 4 24 V DC power supply terminal
- 5 IEC power inlet (cold condition)



Technical data	BA-120C	BA-240C	BA-480C
Output power	150/120 W (Program/RMS)	300/240 W (Program/RMS)	600/480 W (Program/RMS)
Input sensitivity	+4 dB (1,23 V), 30 kohms, balanced		
Output impedance	100V		
Frequency range	35 ~ 20.000 Hz (better than -3 dB)		
Signal-to-noise-ratio	better than 100 dB		
THD at 1 kHz	better than 1%		better than 2%
Input filter	400 Hz /-3 dB		
Power consumption	335 W	650 W	1380 W
Current consumption (230 V)	0,7 A at 1/8 power current draw 1,7 A at 1/1 rated power current draw	1,4 A at 1/8 power current draw 3,3 A at 1/1 rated power current draw	3 A at 1/8 power current draw 6,7 A at 1/1 rated power current draw
AC power supply	230 V, 50 – 60 Hz		
DC power supply	24 V (emergency power supply)		
Dimensions WxHxD in mm	483 x 88 x 374, 2RU		
Weight	approx. 10,5 kg	approx. 12,5 kg	approx. 15,5 kg

# 1-CHANNEL POWER AMPLIFIER (100 V)

# RCS

BA-120 C  
**120 W**

BA-240 C  
**240 W**

BA-480 C  
**480 W**

*High-quality ball-bearing fan ensures quiet running and long service life.*



## Description

These 19" 1-channel power amplifiers are ideal for the use in professional audio applications with 100V line systems. The devices are manufactured in state-of-the-art production processes using high-quality components such as toroidal transformers.

They have been designed for continuous operation. They are absolutely short circuit and open circuit proof and are equipped with all relevant protection devices.

The power supply is raised by AC 230 V mains or by DC 24 V (emergency power supply). The multicoloured LED indicators located on the front panel continuously indicate the operating status of the amplifier including protection functions and possible dangers.

Please consider the following features:

- The amplifiers are equipped with a ball-bearing fan which minimizes running noise and ensures maximum service life.
- Although the devices have different output power ratings (120, 240, 480 W), they all have the same design and identical dimensions.
- The amplifiers have electronically balanced inputs on screw-type connectors. Possible hum pick-up from ground loops is avoided through the balanced inputs and outputs.
- All models feature „soft start“ and a special circuit which suppresses unpleasant switch-on noise.

- The multicoloured LED indicators located on the front panel continuously indicate the operating status of the amplifier including protection functions and possible dangers
- The speaker outputs are designed for 100V lines.

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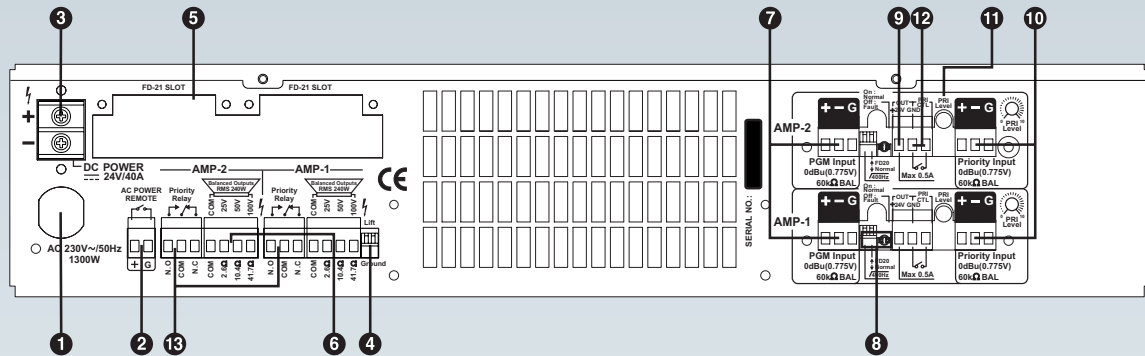
## Model designations

**1-Channel Power Amplifier, (120 W RMS, 2 RU) . . . . . BA-120 C**

**1-Channel Power Amplifier, (240 W RMS, 2 RU) . . . . . BA-240 C**

**1-Channel Power Amplifier, (480 W RMS, 2 RU) . . . . . BA-480 C**

## Rear view



- 1 IEC power inlet (cold condition)
- 2 Remote switch-on via „Power Remote“
- 3 24 V DC power supply terminal
- 4 Ground / Lift switch
- 5 Slot for pilot tone-module FD-21 (optional)
- 6 Speaker outputs, 25 V, 50 V and 100V
- 7 Input on screw-type connectors

- 8 Switches for high-pass filter (400 Hz) and FD-21 module
- 9 24V (500 mA) output for switching external relays or similar units
- 10 Balanced input for priority signal
- 11 Volume control for priority signal
- 12 Contact to activate priority
- 13 Switchover contact at priority

Technical data	BA-2120 DP	BA-2240 DP
Output power	2x 150/120 W (Program/RMS)	2x 300/240 W (Program/RMS)
Input sensitivity	0 dB (0,775 V), 66 kohms, balanced	
Output impedance	25 V, 50 V, 100V	
Frequency range	35 ~ 20.000 Hz (better than -3 dB)	
Signal-to-noise ratio	better than 100 dB	
THD at 1 kHz	better than 0,5%	
Input filter	400 Hz / -3 dB	
Power consumption	670 W	1300 W
Current consumption (230 V)	1.6 A at 1/8 power current draw 3.75 A at rated power current draw	3.1 A at 1/8 power current draw 7.4 A at rated power current draw
AC power supply	230 V, 50 – 60 Hz	
DC power supply	24 V (emergency power supply)	
Dimensions (WxHxD)	483 x 88 x 374 mm; 2 RU	
Weight	approx. 15,5 kg	approx. 19,2 kg

## OPTIONAL | Pilot Tone-Module

## FD-21

### Description

This pilot tone-module serves to monitor the performance of amplifiers. It is installed in the slot provided on power amplifiers of the „DP“ series. The generator produces a 20 kHz test signal. Apart from the test of the power amplifier functioning, the speaker line is checked for short circuit faults.

Evaluation and switching to a backup amplifier is performed by the FS-381 amplifier switcher.



**Pilot Tone-Module** for power amplifiers of the „DP“ series . . . . . **FD-21**

# 2-CHANNEL POWER AMPLIFIER WITH PILOT TONE (OPTIONAL)



BA-2120 CP  
**240 W**  
**2x 120 W**

BA-2240 CP  
**480 W**  
**2x 240 W**

Balanced inputs for programs, **priority** and **pilot tone-module**.



## Description

These 19" 2-channel power amplifiers are **fully monitored** and ideal for the use in professional audio applications with 100 V, 70 V and 25 V line systems. The amplifiers have malfunction message contacts for all relevant functions in case of emergency.

The devices are manufactured in state-of-the-art production processes using high-quality components such as toroidal transformers.

They have been designed for continuous operation. They are absolutely short circuit and open circuit proof and are equipped with all relevant protection devices.

Please consider the following features:

- All the 2-channel amplifiers of the „DP“ series have 2 electronically balanced audio inputs for programs and one input (with **priority**) for priority announcements, etc.
- Each power amplifier can be equipped with 1 **pilot tone-module** (FD-21) which monitors the performance of the amplifier.
- The amplifiers have electronically balanced inputs on screw-type connectors. Possible hum pick-up from ground loops is avoided through the balanced inputs and outputs.
- The screw-type connectors substantially facilitate the wiring for signal input. Time consuming fitting of the input cables with XLR connectors is eliminated.
- By means of a „Power Remote“ contact the amplifier can be switched on, even if the power switch is in the off position.

- The multicoloured LED indicators located on the front panel continuously indicate the operating status of the amplifier including protection functions and possible dangers.
- All models feature „SOFT START“ and a special circuit which suppresses unpleasant switch-on noise.
- A groundlift switch is provided to disconnect signal ground from chassis ground (shielding), in order to avoid any hum pick-up.

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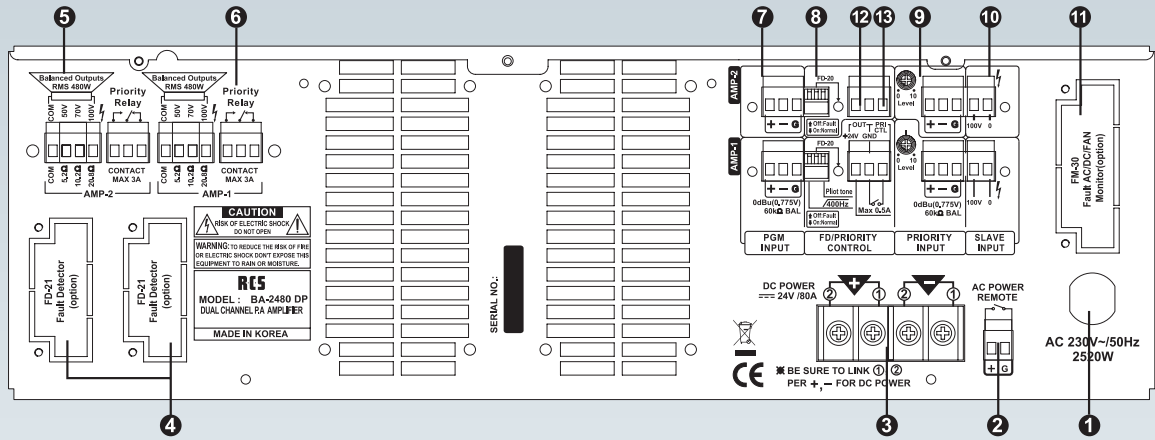
## Model designations

**2-Channel Power Amplifier**, ..... **BA- 2120 DP**  
2 x 120 W RMS, 2 RU, prepared for FD-21

**2-Channel Power Amplifier**, ..... **BA- 2240 DP**  
2 x 240 W RMS, 2 RU, prepared for FD-21

# RCS 2-CHANNEL POWER AMPLIFIER WITH PILOT TONE (OPTIONAL)

## Rear view



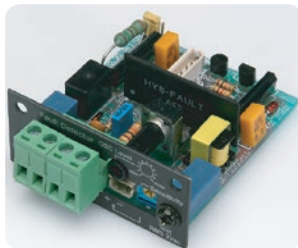
- ① IEC power inlet (cold condition)
- ② Remote switch-on via „Power Remote“
- ③ 24 V DC power supply terminal
- ④ Slot for pilot tone-module FD-21 (optional)
- ⑤ Speaker outputs, 25 V, 50 V and 100V
- ⑥ Change-over contact for priority
- ⑦ Input on screw-type connectors
- ⑧ Switches for high-pass filter (400 Hz) and FD-21 module
- ⑨ Balanced input for priority signal
- ⑩ Input for 100V speaker signal
- ⑪ Slot for Error Monitoring-Module FM-30 (optional)
- ⑫ 24 V (500 mA) output for switching external relays or similar units
- ⑬ Contact for priority enable

Technical data	BA-2480 DP
Output power	2x 720/480 W (Program/RMS)
Input sensitivity	0 dB (0,775 V), 60 kohms, balanced
Output impedance	25 V, 50 V, 100V
Frequency range	35 – 20.000 Hz (better than -3 dB)
Signal-to-noise-ratio	better than 100 dB
THD at 1 kHz	better than 0,4%
Input filter	400 Hz / -3 dB
Power consumption	2.520 W
Current consumption (230 V)	3,1 A at 1/8 power current draw 11,8 A at 1/1 rated power current draw
AC power supply	220–230 V, 50 – 60 Hz
DC power supply	24 V (emergency power supply)
Dimensions (WxHxD)	483 x 133 x 374 mm; 3 RU
Weight	approx. 25 kg

### OPTIONAL | Pilot Tone-Module **FD-21**

#### Description

This pilot tone-module serves to monitor the performance of amplifiers. The generator produces a 20 kHz test signal. Apart from the test of the power amplifier functioning, the speaker line is checked for short circuit faults.

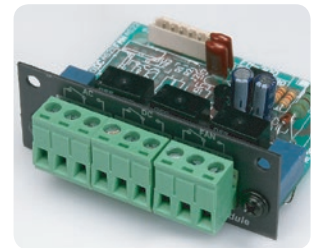


**Pilot Tone-Module** ..... **FD-21**  
Extension-Module for the „DP“ series

### OPTIONAL | Error Monitoring-Module **FM-30**

#### Description

The Error Monitoring-Module has three potential-free Relay contacts (NO/NC). Fault monitoring is operating if AC- or DC-fuse is blown and if AC- or DC-power is off or disconnected. Also the module reacts when fan fault or fan is disconnected.



**Error Monitoring-Module** ..... **FM-30**  
Extension-Module for the „DP“ series

# 2-CHANNEL POWER AMPLIFIER WITH PILOT TONE (OPTIONAL)



BA-2480DP
<b>960 W</b>
<b>2x 480 W</b>

Balanced inputs for programs, **priority** and **pilot tone-module**



## Description

These 19" 2-channel power amplifiers are **fully monitored** and ideal for the use in professional audio applications with 100 V, 70 V and 25 V line systems.

The amplifiers have malfunction message contacts for all relevant functions in case of emergency.

The devices are manufactured in state-of-the-art production processes using high-quality components such as toroidal transformers.

They have been designed for continuous operation. They are absolutely short circuit and open circuit proof and are equipped with all relevant protection devices.

Please consider the following features:

- All the amplifiers of the „DP“ series have one electronically balanced audio input for programs and one input (with **priority**) for priority announcements, etc.
- Each power amplifier can be equipped with 1 **pilot tone-module** (FD-21) which monitors the performance of the amplifier.
- The amplifiers have electronically balanced inputs and outputs on screw-type connectors. Possible hum pick-up from ground loops is avoided through the balanced inputs and outputs.
- The screw-type connectors substantially facilitate the wiring for signal input. Time consuming fitting of the input cables with XLR connectors is eliminated.
- By means of a „Power Remote“ contact the amplifier can be switched on, even if the power switch is in the off position.

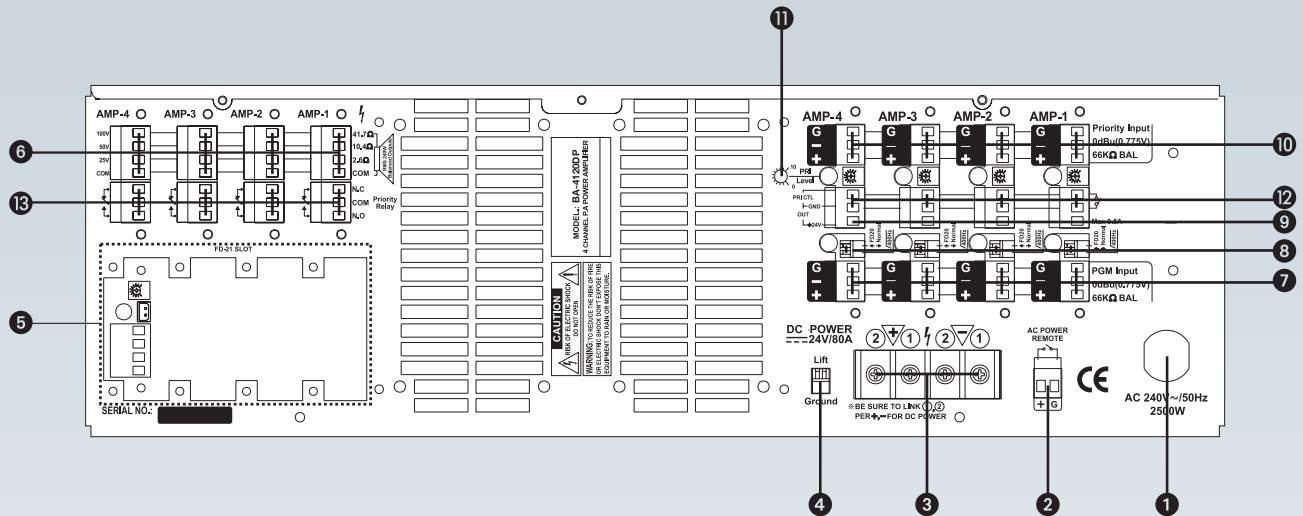
- The multicoloured LED indicators located on the front panel continuously indicate the operating status of the amplifier including protection functions and possible dangers.
- All models feature „SOFT START“ and a special circuit which suppresses unpleasant switch-on noise.

★

## Model designation

**2-Channel Power Amplifier, ..... BA-2480 DP**  
2x 480 W RMS, 3 RU, prepared for FD-21 and FM-30

## Rear view



- 1 IEC power inlet (cold condition)
- 2 Remote switch-on via „Power Remote“
- 3 24 V DC power supply terminal
- 4 Groundlift switch
- 5 Integrated pilot tone-module FD-21 (optional)
- 6 Speaker outputs, 25 V, 50 V and 100 V
- 7 Input on screw-type connectors

- 8 Switches for high-pass filter (400 Hz) and FD-21 module
- 9 24 V (500 mA) output for switching external relays or similar units
- 10 Balanced input for priority signal
- 11 Volume control for priority signal
- 12 Contact for priority enable
- 13 Change-over contact for priority

Technical data	BA-4120 DP	BA-4240 DP
Output power	4 x 180/120 W (program/RMS)	4 x 300/240 W (program/RMS)
Input sensitivity	0 dB (0,775 V), 66 kohms, balanced.	0 dB (0,775 V), 66 kohms, balanced
Output impedance	25 V, 50 V, 100V	25 V, 50 V, 100 V
Frequency range	35 ~ 20.000 Hz (better than -3 dB)	35 ~ 20.000 Hz (better than -3 dB)
Signal-to-noise ratio	better than 100 dB	better than 100 dB
THD at 1 kHz	better than 0,5%	better than 0,5%
Input filter	400 Hz / -3 dB	400 Hz / -3 dB
Power consumption	1300 W	2500 W
Current consumption (230 V)	3 A at 1/8 power current draw 6.8 A at rated power current draw	5 A at 1/8 power current draw 11.8 A at rated power current draw
AC power supply	230 V, 50 – 60 Hz	230 V, 50 – 60 Hz
DC power supply	24 V (emergency power supply)	24 V (emergency power supply)
Dimensions (WxHxD)	483 x 133 x 440; 3 RU	483 x 133 x 440; 3 RU
Weight	approx. 26,5 kg	approx. 29,6 kg

## OPTIONAL | Pilot Tone-Module

## FD-21

### Description

This pilot tone-module serves to monitor the performance of amplifiers. It is installed in the slot provided on power amplifiers of the „DP“ series. The generator produces a 20 kHz test signal. Apart from the test of the power amplifier functioning, the speaker line is checked for short circuit faults.

Evaluation and switching to a backup amplifier is performed by the FS-381 amplifier switcher.



**Pilot Tone-Module** for power amplifiers of the „DP“ series. . . . . **FD-21**

# 4-CHANNEL-AMPLIFIER WITH PILOT TONE (OPTIONAL)



BA-4120DP  
**480 W**  
 4x 120 W

BA-4240DP  
**960 W**  
 4x 240 W

Balanced inputs for programs, priority and pilot tone-module.



## Description

These 19" 4-channel power amplifiers are fully monitored and ideal for the use in professional audio applications with 100 V, 70 V and 25 V line systems.

The devices are manufactured in state-of-the-art production processes using high-quality components such as toroidal transformers.

They have been designed for continuous operation. They are absolutely short circuit and open circuit proof and are equipped with all relevant protection devices.

Please consider the following features:

- All the amplifiers of the „DP“ series have four electronically balanced audio inputs for programs and four further inputs (with priority) for priority announcements, etc.
- Each power amplifier can be equipped with 4 pilot tone-modules (FD-21) which monitor the performance of the amplifier.
- The amplifiers have electronically balanced inputs and outputs on screw-type connectors. Possible hum pick-up from ground loops is avoided through the balanced inputs and outputs.
- The screw-type connectors substantially facilitate the wiring for signal input. Time consuming fitting of the input cables with XLR connectors is eliminated.
- The multicoloured LED indicators located on the front panel continuously indicate the operating status of the amplifier including protection functions and possible dangers.

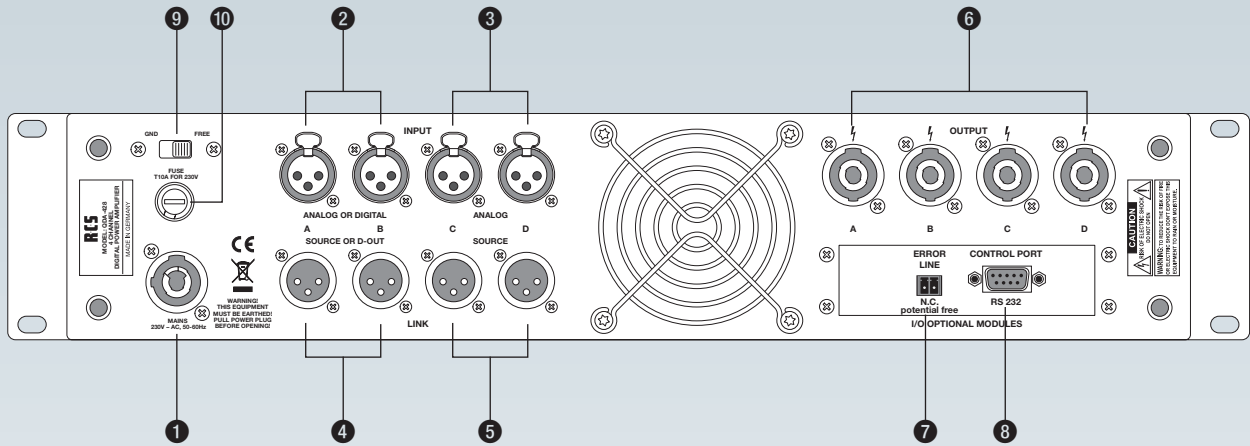
- By means of a „Power Remote“ contact the amplifier can be switched on, even if the power switch is in the off position.
- All models feature „SOFT START“ and a special circuit which suppresses unpleasant switch-on noise.

★

## Model designations

**4-Channel Power Amplifier, ..... BA-4120 DP**  
 4 x 120 W RMS, 3 RU, prepared for FD-21  
**4-Channel Power Amplifier, ..... BA-4240 DP**  
 4 x 240 W RMS, 3 RU, prepared for FD-21

## Rear view



- 1 mains input 230V AC (Powercon connection)
- 2 audio audio inputs 1-2 (XLR-3M)
- 3 audio audio inputs 3-4 (XLR-3M)
- 4 AF audio outputs 1-2 (Link output, XLR-3F)
- 5 AF audio outputs 3-4 (Link output, XLR-3F)

- 6 outputs for loudspeakers (4-8 ohms)
- 7 Error output (optional, potential-free contact)
- 8 RS-232 interface (option module)
- 9 ground lift switches
- 10 Mains fuse T10 A

## FEATURES



- + 4 rotary encoders with print function
- + SD card slot
- + optimized presets for QRI series
- + Navigation pad
- + LCD graphic display

Technical data		QDA-428 A
Output power (1 kHz, 1 % THD)	8 ohms	4x 400 W
	4 ohms	4x 700 W
Input sensitivity		0 dB (775 mV), adjustable
Output impedance		4-8 ohms
Frequency range		20 - 20.000 Hz (better -3 dB)
Signal to Noise Ratio		better than 100 dB
Harmonic distortion (THD)		better than 0,5%
Processor		DSP, 24 bit/ 48 MHz
Power consumption		2.500 W
Power supply (230 V)		at 1/8-load 1,49 A at 1/1-load 10,8 A
Power supply AC		90 - 250 V / 50 - 60 Hz, PowerCon In
Dimensions (WxHxD)		483 x 88 x 375 mm; 2 RU
Weight		8,5 kg

# 4 CHANNEL AMPLIFIER WITH DSP (DIGITAL)

# RCS

QDA-428 A  
**2.800 W**  
4x 700 W



## Description

The QDA-428A is a fully digital Class D high power amplifier with 4 separate and independent channels. It includes full audio DSP features such as matrix routers, 6 full parametric equalizers, 2 crossovers, delays and dynamics processor per channel.

All parameters of these modules as well as further inputs are set directly on the device via the 5-button navigation pad and 4 encoders with key function.

A graphics-compatible LCD display and 4 RGB LEDs form the output interface and also provide information about the current operating parameters of the device such as input and output levels as well as the status of the individual channels.

Factory and user-presets can be stored in the device. The QDA-428A has an SD card slot. A module slot for future extensions, such as connection to audio and control network has been integrated (RS-232 interface and NC signal contact).

There are 4 analogue or 2 digital inputs available, which can also be used in combination. Furthermore, link jacks are available for the respective input signal used or as „processed“ digital outputs.

Four neutrik speakon jacks are available on the output side (two of them are double-assigned for bi-amp mode).

AES / EBU as well as S / PDIF with 16 - 24 bit and 32 - 192 kHz are accepted as digital input signals. The device generates AES / EBU with 24 Bit and 48 kHz.

Another feature is the PFC supported audio optimized wide-range switching power supply (SMPS). Extensive protection circuits and digital monitoring functions round off the professional features of this device, whose broadband applications

range from monitor operation and system operation with passive PA components (in actively separated PA systems) to the realization of multi-channel systems in fixed installations.

Please consider the following features:

- The front LEDs indicates important signal and operating conditions.
- 4 integrated, fully digital power amplifiers with high efficiency (> 90%).
- Protection circuits per channel (adjustable GAIN, crossover, subsonic filter, 6 full parametric EQs, peak RMS limiter, compressor, phase (180 °), delays (0-1000 ms), mute functions, matrix router).

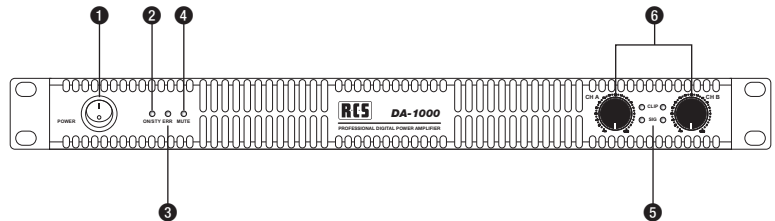
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## Model designation

**4-Channel Power Amplifier, ..... QDA-428 A**  
4x 700 W (4 ohms), 4x 400 W (8 ohms), with DSP-function, 2 RU

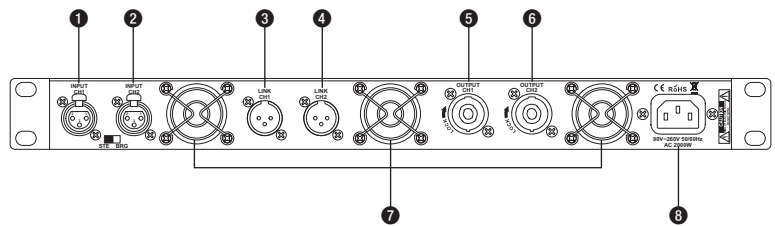
## FRONT VIEW

- 1 Power On/Off Switch**  
Switch to turn the device on / off
- 2 Power/Standby LED**  
Lights up if the device is "on"
- 3 Error LED**  
Lights up when a fault occurs
- 4 Mute LED**  
Lights when an active protection circuit removes the input signal
- 5 Signal/Clip LED**  
Signal: Lights up when gain from 100mV  
Clip: Lights up when a too high input signal overload the amplifier
- 6 Input level control**  
To adjust the volume of each



## REAR VIEW

- 1 XLR (balanced)**  
Signal input for Channel 1
- 2 XLR (balanced)**  
Signal input for Channel 2
- 3 Parallel connected „Link“ - output on XLR**  
for channel 1 for forwarding the input signal to other devices or amplifiers
- 4 Parallel connected „Link“ - output on XLR**  
for channel 2 for forwarding the input signal to other devices or amplifiers
- 5 Speakon® Speaker output jack for channel 1**
- 6 Speakon® Speaker output jack for channel 2**
- 7 Fan**  
Temperature controlled cooling fans
- 8 AC mains connection**  
To connect an IEC power connector 230V AC



Technical data		DA-200	DA-600	DA-1000
Output power (1 kHz, 0,1 % THD)	8 ohms – stereo	2x 200 W	2x 600 W	2x 1000 W
	4 ohms – stereo	2x 360 W	2x 1000 W	2x 1700 W
	8 ohms bridged	1x 720 W	1x 2000 W	1x 3600 W
Frequency range		20 – 20.000 Hz ±0,1 dB		
THD (THD 1kHz, 8 ohms)		< 0,1%		
Input sensitivity	4 ohms/Stereo	+4 dBu/1,23 V		
Signal-to-noise ratio		better than 100 dB		
Crosstalk		better than -70 dB		
Common-mode rejection ratio (CMRR)		20 V/μS		
Power supply		220V – 240V/AC, 50-60 Hz		
Power consumption at 4 ohms		400 W	900 W	1600 W
Dimensions (WxHxD)		483 x 44 x 258 mm (1 RU)		483 x 44 x 224 mm (1 RU)
Weight		3,2 kg	3,2 kg	3,9 kg

# PRO-SOUND CLASS-D POWER AMPLIFIER



Class-D Power Amplifier · bridge operation possible



## DESCRIPTION

These digital (Class D) 2-channel 19" power amplifiers (1 RU) are ideal for the use in professional acoustic sounding devices.

The devices are manufactured in state-of-the-art production processes using high quality components.

They have been designed for continuous operation. They are absolutely short circuit and open circuit proof and are equipped with all relevant protection devices.

Please consider the following features:

- The Led's on the front inform about important signal and operating conditions
- Special protective circuit against open circuit, short circuit, overhead and a power up delay are naturally.
- The speaker outputs are designed for 8 ohms, 4 ohms or bridge operation and suitable to be used in almost all types of speaker in the corresponding output classes.
- Across the digital technology there is a very high efficiency of the amplifiers which achieves results in a very low heat development (natural life of the devices) and a relatively low power consumption.
- The amplifiers have protection circuitry against short circuit, overheating, power up delay, DC fault protection and a clip limiter to prevent overloading the speakers.

- The front panel of the amplifiers is designed that all important information's about the operating status are visually. These indicators are: power LED display, clip LED display, protect and signal LED.

★

- + Degree of efficiency of over 90%
- + Energy saving
- + Minimum space requirement (only 1 RU)
- + Low heat waste

## Model designations

- Pro-Sound Class-D Amplifier, 2x 360 W ..... **DA-200**
- Pro-Sound Class-D Amplifier, 2x 1000 W ..... **DA-600**
- Pro-Sound Class-D Amplifier, 2x 1700 W ..... **DA-1000**

## FRONT VIEW

### 1 LED indicators

Temperature LED  
lights up when temperature problems occur  
Clip/Lim LED  
lights up in the event of signal overload  
Signal LED  
lights up from an amplification of 100 mV  
Power LED  
indicates operating status of respective channel

### 2 Volume controls

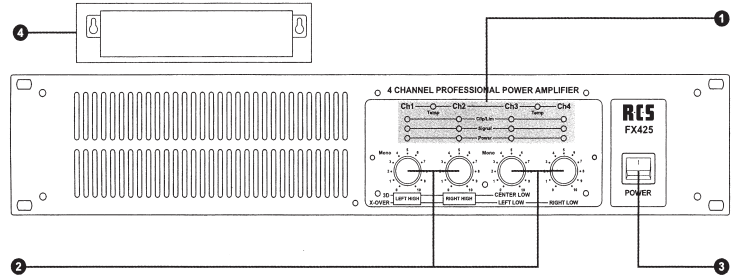
For adjusting the volume of the respective channel

### 3 Power switch

ON/OFF switch

### 4 Cover

Protective cover for volume controls



### 1 Power cord

Power cord for 230 V AC.

### 2 Signal input and LINK

Balanced inputs on XLR sockets and LINK outputs on jack sockets (6.3 mm).

### 3 Limiter switch

Switch for activating the peak limiter

### 4 LS outputs

2-pin screw-type sockets for connection of loudspeakers

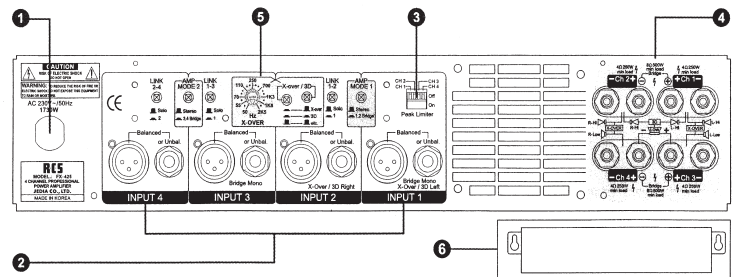
### 5 Operating modes

Switch to select the operating mode: Stereo, mono, bridged, X-Over and 3D.

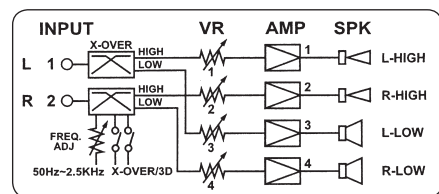
### 6 Cover

Cover for the operating mode selector switch

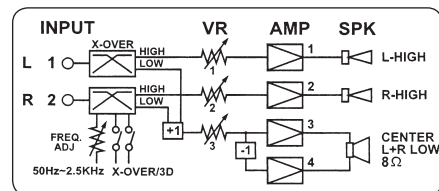
## REAR VIEW



Technical data	FX-425	
Output power (1 kHz, 1 % THD)	8 ohms stereo	4 x 165 W
	4 ohms stereo	4 x 250 W
	8 ohms bridged	2 x 500 W
Output power (1 kHz, 0.1 % THD)	8 ohms stereo	2 x 150 W
	4 ohms stereo	2 x 230 W
Frequency range at 4 ohms	20 – 20.000 Hz +0 / -0,5 dB	
Input sensitivity at 4 ohms	+4 dBu (1,23 V)/30 kohms bal	
Signal-to-noise ratio	better than 100 dB	
Crosstalk	better than 65 dB	
Input clipping	10 Vrms (+22 dB)	
Damping factor (8 ohms, 1 kHz)	better than 300	
Slew rate	better than 50 V/us	
Power supply	220V – 240V/AC, 50–60 Hz	
Power consumption at 4 ohms	1730 W	
Dimensions (WxHxD)	483 x 88 x 380 mm (2 RU)	
Weight	16,5 kg	



Connection example with X-over 2-channel operation



Connection example with 3D 2-channel operation

# PRO-SOUND 4-CHANNEL AMPLIFIER

# RCS

With X-Over/3D and Limiter



## ● GENERAL

With its 4 separate output stages, this 19" 4-channel power amplifier provides different operating modes and a wide range of connection options.

## ● SOFT START

The amplifier features a speaker turn-on/off delay to protect the loudspeakers and to avoid pops associated with turning power on or off.

## ● PROTECTION CIRCUITS

The FX-425 has protection circuits against short circuit, overheating, inductive load, etc.

## ● LIMITER

The limiter serves as an overload protection for the loudspeakers and can be switched separately for each channel.

## ● PERFECT COOLING

The amplifier is equipped with a quiet running cooling fan, which, together with the vents in the housing, provides excellent cooling.

## ● MODERN DESIGN

The FX-425 power amplifier has a modern, functional and economic 19" design (2 RU).

It is suitable for demanding applications and gives great performance, even when operating at „full load“.

## ● INFORMATIVE DISPLAY

The front panel of this amplifier has been designed in such a way that the user constantly gets all important information on the current operating status, e.g. through indication of protective functions, active clipping, power on, temperature, etc.

## ● X-OVER/3D FUNCTION

Different operating modes are available to the user including:

- 4-channel mono ( 4 x 250 W )
- 2-channel stereo linear (internal crossover network deactivated)
- 2-channel stereo operation with active crossover network (50Hz - 2,5 KHz)
- 2-channel stereo operation with crossover network and mono bass

## ● ACTIVE CLIPPING

The amplifier features a special ACTIVE CLIPPING function across the entire frequency range of 20 Hz - 20 kHz. The input and output signals are constantly compared, and deviations that exceed a certain value, e.g. 0.5%, are indicated by the signal LED.

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## Model designation

Pro-Sound 4-Channel Amplifier, 4 x 250 W ..... **FX-425**



### Description

The AD-125A audio distribution amplifier is, so to speak, the central unit of the extremely flexible line level distribution system. The system serves to route line signals from mixer preamplifiers, sound source devices, etc. of up to 10 output channels (power amplifier, with 1-channel operation) or 2 x 5 output channels (with 2-channel operation).

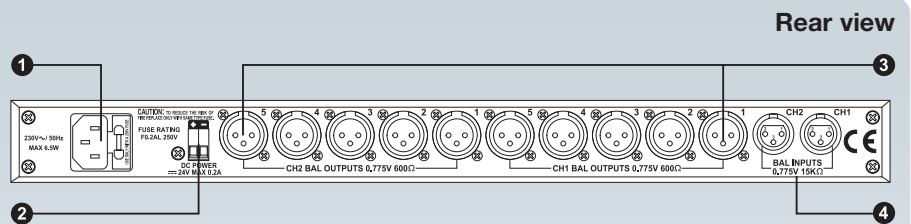
Please consider the following features:

- Each of the 10 outputs can be controlled separately. An LED overmodulation indicator is provided for the two input channels.
- The device is incorporated in a 19" housing with an overall height of 1 RU.

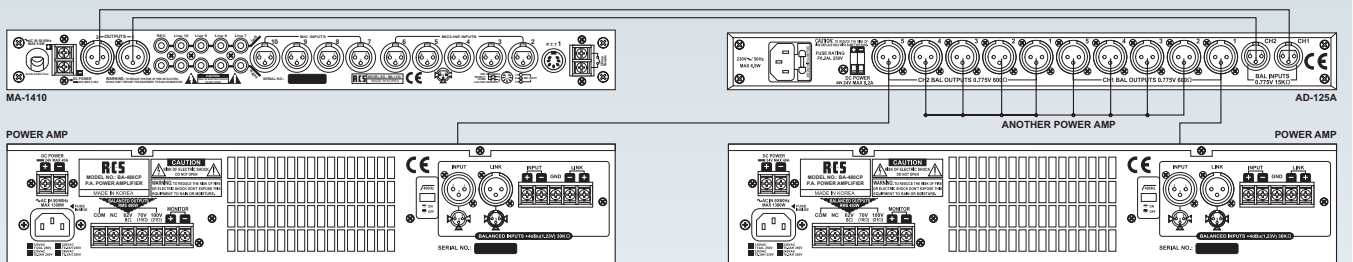
- Apart from the numerous features such as balanced inputs and outputs, the audio distribution amplifier offers excellent sound characteristics. It is also distinguished by its extreme ease of installation and operation.

Technical data	AD-125A
Input impedance	0,775 V (0 dB), 15 kohms, balanced on XLR
Output impedance	0,775 (0 dB), 600 ohms, balanced on XLR
Frequency range	better than - 0,5 dB (20 Hz – 20 kHz)
Signal-to-noise ratio	better than 108 dB
THD	less than 0,05 % (20 Hz – 20 kHz)
Crosstalk attenuation	better than 108 dB
Power supply	AC 230 V (50 – 60 Hz), DC 24 V
Power consumption	6,5 W
Dimensions (WxHxD)	483 x 44 x 200 mm, (19", 1 RU)
Weight	approx. 2,9 kg

- 1 IEC power inlet (cold condition)
- 2 Terminal for 24 V DC (emergency power supply)
- 3 XLR signal output sockets
- 4 XLR signal input sockets



### Connection example



### Model designation

Audio Distribution Amplifier, (1 RU)

**AD-125A**

# UNIVERSAL AMPLIFIER MONITORING



For 8 call amplifiers and 2 spare amplifiers



## Description

PHM-802 C digital amplifier switchover unit is designed to monitor up to 10 power amplifiers simultaneously. Up to 8 amplifiers can be configured as call amps, backed up by up to 2 spare amplifiers.

PHM-802 C works self-sustaining and independent of other components. Alternatively, it can be integrated into a VARES-3000 system.

Please consider the following features:

- Setting up PHM-802 C is done easily via a clearly represented menu that is displayed on the big front display. All the programming work is done by just four function keys, a computer is not necessary to configure PHM-802 C.
- The health status of each connected amplifier is shown on the front display.
- Faults will be indicated until the cause of the problem is repaired.
- All connectors are service-friendly pin-and-socket-connector types that are perfectly suited for installed audio equipment.
- 8 call amps can be linked with 1 spare amp, or two groups made of 4 call amps each can be linked to 2 spare amps (1 spare amp per group). Can also be used without spare amplifier.
- PHM-802 C offers an input for 230 V AC switching power supply (switched to 24V) and an additional input for 24 V DC emergency power.
- A bigger number of amplifiers can be monitored by using several PHM-802 C.
- The measured level of the pilot tone can be adjusted for each 100V power amplifier at the device.
- A variety of pilot tones is available, ranging from 19 kHz to 25 kHz.
- An alarm output for external fault messages allows easy routing of messages within the voice alarm system.
- The menu is available in English or German language.

- Optionally, the monitor module PMU-802A can be installed to intercept all 10 amp outputs.

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## Monitor option PMU-802A

After installation of the monitor module every 10 amplifier outputs (8 + 2) can be monitored. The selection of the desired channel and volume via keyboard on the device or connected PC with the software „ConfigV3000“.

**Monitor option**, for PHM-802 C ..... **PMU-802 A**  
 Monitor speakers: Broadband, 4W 8 ohms. Listening power: 1.3 W RMS amplifier

## Bus option PHM-485

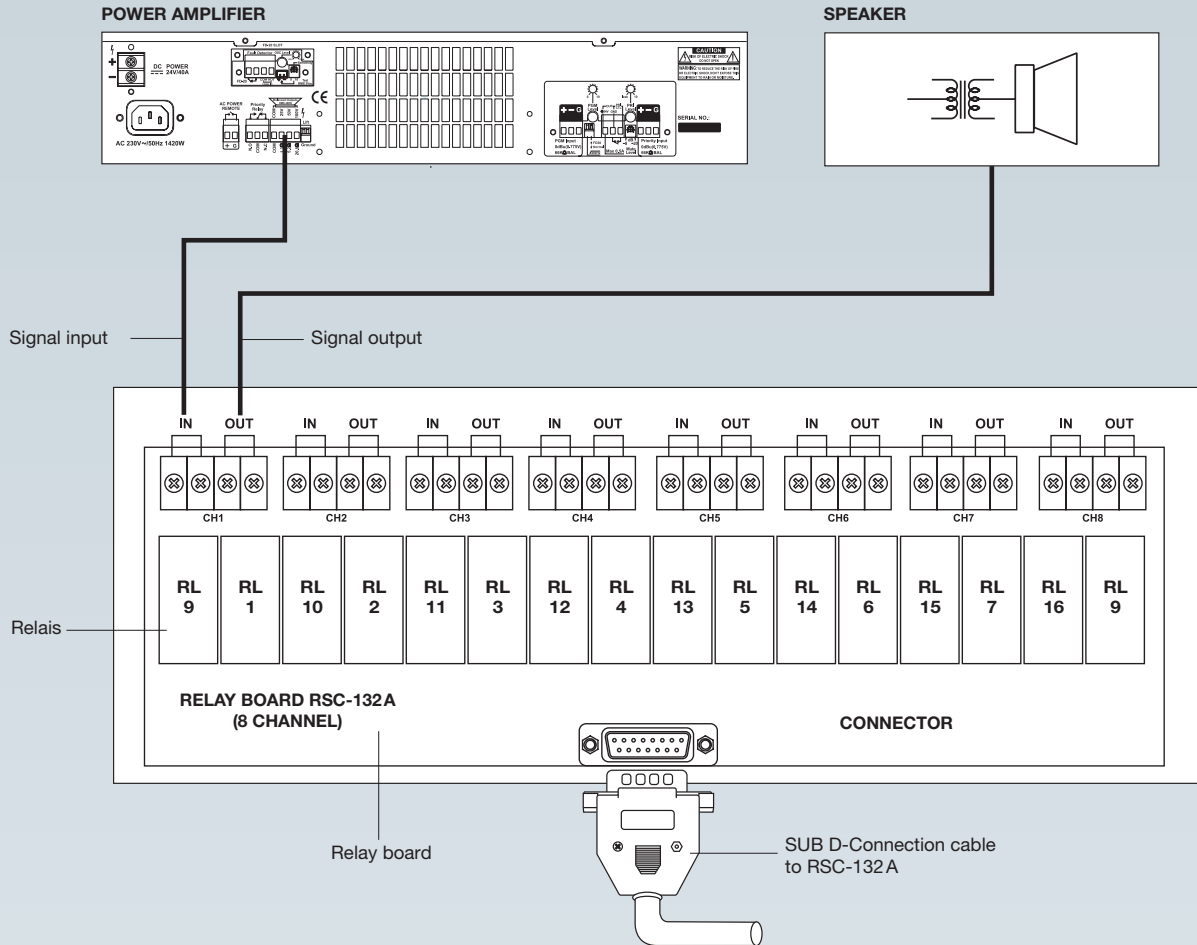
With this interface modification option the amplifier monitoring can be integrated in the VARES-3000-System. The monitoring of the device is guaranteed by the bus cable, as well as different configurations of the software „ConfigV3000“.

**Bus option** ..... **PHM-485 B**

Technical data	PHM-802 C
Display	LCD Dot Matrix 2x24, illuminated, adjustable contrast
Monitored Amplifier	8 + 1 (Spare) or 2x 4 + 2x 1 (Spare)
Pilot tone	19/19,5/20/20,5/21/21,5/22/22,5/23/23,5/24/24,5/25 kHz
Sample rate	adjustable 15/30/45/60/90 Sec. (5 Sec. with Bus-Option)
Power consumption	5 W
Listening power	Amplifier 1,3W RMS
Bus connection	RS485-Bus (optional) to RJ-45, failure announcement outputs, RS232 for Firmware-Update
Switching capacity	6 A each channel
Power supply	24V DC
Power source	Switching power supply / Accu (emerg. power supply 24 V)
Dimensions (WxHxD)	483 x 44 x 171 mm (1 RU)
Weight	1,5 kg

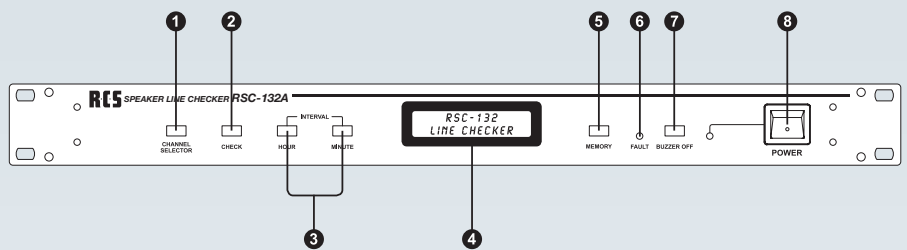
**Amplifier monitoring**, (1 RU) ..... **PHM-802 C**

## Connecting Diagram



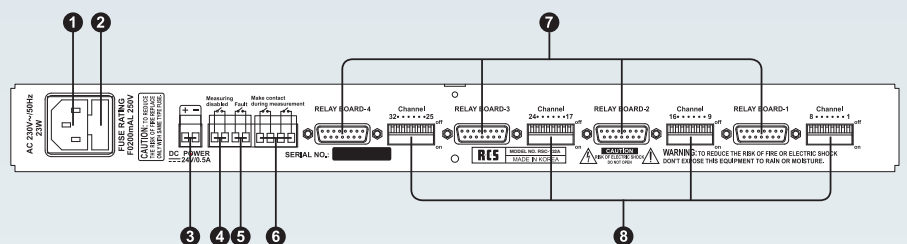
- ❶ Line selector button
- ❷ Check button for checking the respective line
- ❸ Setting of the measuring intervals (hour/minute)
- ❹ LCD
- ❺ Button for saving the measured values
- ❻ LED for visual fault indication
- ❼ Button for deactivating the buzzer
- ❽ Power switch

## Front view



- ❶ 230 V power inlet
- ❷ Fuse holder
- ❸ Terminal for 24 V emergency power supply
- ❹ Contact for interrupting the measurement
- ❺ Make contact in the case of faults
- ❻ Make contact during measurement
- ❼ Connections for the relay boards
- ❽ Line switch for activation of lines

## Rear view



Line monitoring for up to 32 lines



### Description

The RSC-132A is a microprocessor controlled line monitoring device. Up to 32 speaker lines can be monitored fully automatically.

Faults are indicated through a buzzer incorporated in the device, an LED located on the front panel and a potential free contact on the rear. Through the use of external relay boards, connected via a 5 m SUB D cable, the unit is only 1 RU in height. The only preparatory measure for putting the device into operation is to insert the RSC-008A relay boards into the speaker lines. To complete the installation, the relay boards only have to be connected to the base unit and have to be measured.

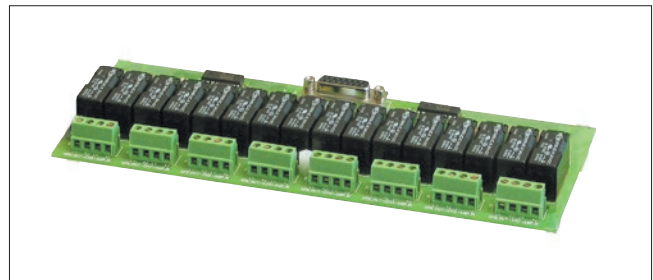
Please consider the following features:

- Integrated Watchdog circuit.
- By measuring the impedance, the device detects missing speakers, short circuits on the line or line breaks.
- When the measurement is performed, the line is checked for ground faults at the same time.
- If the measured values are above or below the permissible range, the device indicates „over“ or „under range“.
- The measuring intervals can be set from 1 minute to 24 hours.
- The configuration is stored in a non-volatile E<sup>2</sup>PROM.
- With 4 relay boards (for 8 circuits) one RSC-132A unit can monitor up to 32 circuits.
- In the event of an emergency or when an important announcement has to be made, the measurement can be interrupted by means of a potential free contact.
- When a fault is detected, the unit issues an audible alarm. Additionally, the LED on the front panel is lit. At the same time a contact is closed to activate external units.

- The 2-digit LCD constantly indicates the time remaining until the next measurement is taken or, in the case of a fault, the type of fault and the affected line.

### RSC-008A Relay Board

The relay board has been designed for the connection of the speaker lines. Up to 4 boards (32 circuits) can be connected up to a RSC-132A monitor unit. The card provides one additional relay per line, which disconnects the affected line from the 100V output after measurement.



Technical data	RSC-132A/RSC-008 A
Speaker circuits	8 (can be extended to up to 32)
Measuring time	100 ms per circuit
Measuring range	25 ohms – 1,6 kohms (6 W – 400 W)
Power consumption	23 W
Power supply	230 V AC/24 V DC
Dimensions in mm (WxHxD)	483 x 44 x 200 mm, 1 RU
Weight	3,0 kg

### Model designations

**Speaker Line Monitoring Unit**,..... **RSC-132A**  
with matching relay boards for up to 32 lines

**Relay Board**,..... **RSC-008A**  
each for 8 lines



### Description

The MU-307A monitor unit serves for the audible and visual monitoring of amplifiers as well as of pre-amp outputs. The system is incorporated in a stable 19" housing (2 RU) and can be used with 100V line systems as well as for low-impedance applications. A high-quality full range speaker and a headphone output facilitate continuous monitoring. The monitor speaker and the headphone output have separate volume controls. The line volume is set through controls located on the front panel. Level indication is also on the front panel through multicoloured LED chains.

Please consider the following features:

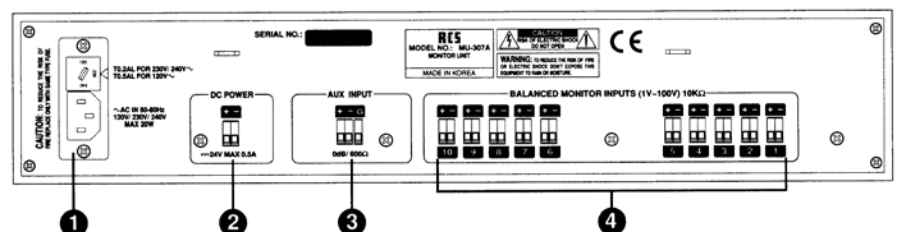
- Up to 10 programmes can be monitored. Channel selection is performed by means of the multi-position selector switch. A 5-segment level indicator LED is provided for each line.
- The volume of the monitor speaker or the headphone is continuously variable.

- Each of the 10 monitor inputs can be set to the required input voltage (1 – 100V) by means of a special control on the front panel.
- The unit operates on mains power (230 V AC) as well as on DC power (24 V DC), for example, in the case of a power failure (emergency power supply).

Technical data	MU-307 A
Speaker	Full range chassis, 2 W with volume contro
Headphone output	max.: 1.0 W min. 8 ohms, with volume control
Input voltage	1 V – 100V (continuously variable)
AUX input	0 dB, 10 kohms, balanced
Monitor channels	10, can be switched separately
Power consumption	max. 12 W
Power supply	AC 120 V, 220 V, 230 V, 240 V (50 – 60 Hz), DC 24 V
Frequency range	better than -3 dB (100 Hz – 20 kHz)
Dimensions (WxHxD)	483 x 88 x 200 mm (19", 2 RU)
Weight	approx. 4,7 kg

- 1 IEC power inlet (cold condition)
- 2 Terminal for 24 V DC (emergency power supply)
- 3 Monitor input of preamplifier
- 4 Monitor input of amplifier lines (1 V - 100V)

Rear view



### Model designation

Monitor-Unit, (2 RU) ..... **MU-307 A**



## Description

The AC/DC power distributor is incorporated in a stable housing (3 RU). The use of high-quality components ensures that the continuous load required for audio systems are met.

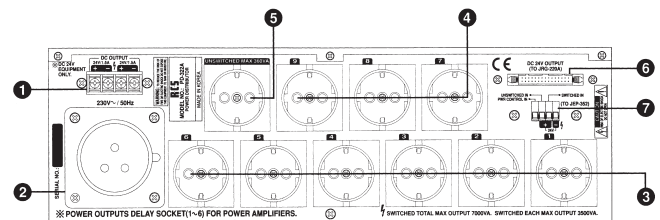
The device serves as a power supply and power distribution in the central 19" rack. It supplies and distributes both 230 V mains power and 24 V DC power.

In the case of a power failure, the EP-352 automatic battery charger provides emergency power supply, after it has been activated through a switch contact of the PD-322 power distributor.

Please consider the following features:

- 1 integrated DC power supply units (24 V) with 1.5 A for the connection of 24 V devices.
- The 24 V line is protected against short circuit.
- All fuses can be accessed through a panel on the front.
- In order to limit the turn-on current, circuits 1 – 6 are equipped with a turn-on delay.
- To ensure that an emergency announcement can be made, even when the PD-322A is switched off, a switch-on can be done via a potential free contact, when simultaneously terminal 7 (see manual) is supplied with 24 V.
- There are 6 switched sockets with an overall maximum rating of 230 V/7000 W/30 A. Furthermore the PD-322A provides 3 switched power outlets with 115 W/230 V each and one none switched 230 V power outlet.

## Rear view



- 1 2 connections only for 24 V devices with max. 1.5 A each
- 2 Screw terminal for main power supply
- 3 6 switched power supply sockets with total max. 230 V/ 7000 W/ 30 A
- 4 3 switched power supply sockets with 115 W/230 V each
- 5 Unswitched 230 V output
- 6 24 V output
- 7 Control and switch contact to be connected with EP-352

Technical data	PD-322A
DC power distribution	2 x 24 V/1,5 A max.
AC power distribution	1 ~ 6: 230 V/7000 W/30 A (switched)
	7 ~ 9: 230 V/je 115 W max. (switched)
	1x: 230 V/360 W max. (unswitched)
Power consumption	AC: 120 W DC: 24 V/3 A
Power supply	230 V
Dimensions (B x H x T)	483 x 133 x 380 mm, 3 RU
Weight	8 kg

## Model designation

Power Distributor (AC/DC), (3 RU).....**PD-322A**



### EP-352 RM

+ Integrated reverse charge protection in order to protect the lead-accumulator.

+ Automatic activation (changeover) of the 24 V emergency power in case of an AC power failure.

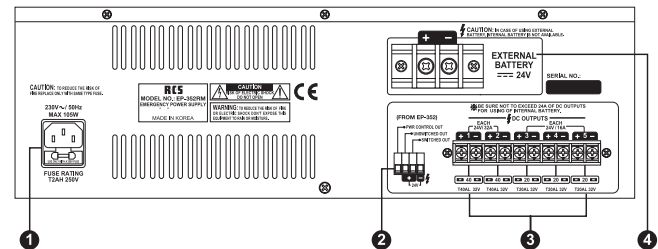
### Description

This emergency power management is built into a stable 19" cabinet (3 RU). All of the utilized components are of superior quality to ensure that even 100V Power Amplifiers operate precisely despite ongoing carrying capacity. This device takes charge of charging the 24 V emergency power batteries whilst an electronic control circuit protects the battery from overcharging. The fact that it automatically switches over to emergency power and the built in reverse charge protection (only for EP-352 RM) enables the user to expand the utilization of this device considerably.

- Charging status display and LED with division into a percentage. (optional lead-accumulators, see below)
- Protection against polarity reversal and overcharging and excess voltage regarding the charging batteries.
- 24V emergency power supply in case of AC power failure, either via switching contact of the power distributor PD-322 A (EP-352) or automatically (EP-352 RM).
- Integrated reverse charge protection (only EP-352 RM) for 24 V charging batteries (in case the storage battery voltage drops below the given minimum value with regard to DC operation, the automatic DC commutation will be deactivated).
- Two 24 V outputs with each 32 A and three 24 V outputs with each 16 A.

Technical data	EP-352	EP-352 RM
End-of-charge voltage	approx. 27,3 V DC	
Charging current	2,5 A	
Power consumption	105 W	
Power supply	230 V	
Dimensions (W x H x D)	483 x 133 x 350 mm, 3 RU	
Weight	11,6 kg	11,8 kg

### Rear view



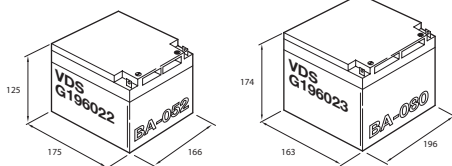
- 1 Power- and low power jack
- 2 Power control unit (here a deactivation of an automatic commutation to DC power is possible for maintenance purposes)
- 3 24V DC connecting clamp for emergency power supply of the amplifier
- 4 Screw terminal in order to connect any external battery

**Charger, (3 RU)..... EP-352**  
without integrated reverse charge protection and automatic activation

**Automatic Charger, (3 RU)..... EP-352 RM**  
incl. emergency power management

### VDS-Nr. G196022

### VDS-Nr. G196023



These lead-accumulators are maintenance free. The operation of the EP-352 is either possible with a built-in (BA-052) or with an external (BA-052 or BA-080) lead-accumulator set.

Technical data	BA-052	BA-080
Nominal voltage	24 V (12 V per battery)	24 V (12V per battery)
Capacity	27 Ah	42 Ah
Connections	M5-screws	M6-screws
Dimensions (W x H x D)	166 x 125 x 175 mm	196 x 174 x 163 mm
Weight	9 kg per battery	14,3 kg per battery
VDS-Nr.	G196022	G196023

**Lead Acid Battery-Set, for internal operation (27 Ah)..... BA-052**

**Lead Acid Battery-Set, for external operation (42 Ah)..... BA-080**

# EMERGENCY POWER MANAGEMENT

COMPLIANT TO VDE 0828 / IEC 50849

# RCS

**DIN**  
EN 60849  
VDE 0828

**DESIGN + QC**  
IN GERMANY



## Description

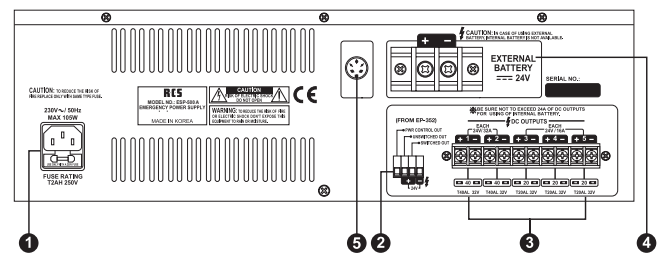
This emergency power management ESP-500A was developed for danger alarm devices, which have to be in accordance with the international standard **IEC 50849**. Any kind of error will be indicated and announced via a signal buzzer, a buzzer or LED.

Please consider the following features:

- Output-fuse monitoring with notice of malfunction in order to ensure automatic alarm in case of emergency power usage.
- Monitoring of the accumulator connection to signal in case an accumulator is missing or disconnected.
- Acoustic and optical error message directly on the device in addition to the accumulative alert output.
- Charging status display and LED with division into a percentage.
- Protection against polarity reversal and protective circuit against overcharging and excess voltage regarding the charging batteries.
- Integrated reverse charge protection for 24 V charging batteries (in case the storage battery voltage drops below the given minimum value with regard to DC operation, the automatic DC commutation will be deactivated).
- Two 24 V outputs with each 32 A and three 24 V outputs with each 16 A.

★

## Rear view



- 1 Power- and low power jack
- 2 Power control unit (here a deactivation of an automatic commutation to DC power is possible for maintenance purposes)
- 3 24 V DC connecting clamp for emergency power supply of the amplifier
- 4 Screw terminal in order to connect any external battery
- 5 Failure announcement contact

Technical data	ESP-500A
End-of-charge voltage	approx. 27,3 V DC
Charging current	2,5 A
Power consumption	105 W
Power supply	230 V
Battery capacity	27 Ah (BA-052); 42 Ah (BA-080) possible power with BA-080 e.g: 4x 240 W or 2x 480 W
Dimensions (W x H x D)	483 x 133 x 350 mm, 3 RU
Weight	12 kg

## Model designations

**Automatic Charger**, (3 RU) with emergency power management compliant to IEC 50849 ..... **ESP-500A**  
**Lead Acid Battery-Set**, for external operation (42 Ah) ..... **BA-080**



Conforms to:  
EN 54-4:2007, EN 12101-10, NFS 61940

### Description

The digital emergency management ESP-2000 B was developed for voice alarm systems, which must correspond to the standard **VDE 0833 - part 4**. All errors are displayed and reported on fault signal contacts, as well as a buzzer and an LED. The device is still certified to EN 54-4.

Please consider the following features:

- Network fault monitoring with switchover to standby power mode.
- Monitoring of battery errors (with internal resistance measurement).
- Monitoring of the 6 or 12 power outputs for amplifiers.
- Function for a balancing charge to avoid different voltages of the individual battery cells.
- A quick charge function with up to 16A or 32A, allows a rapid recharge the battery packs even with large capacities.
- Fault signal are realized in the event of a fault with sloping relay.
- Integrated depth discharge protection for 24 V batteries.

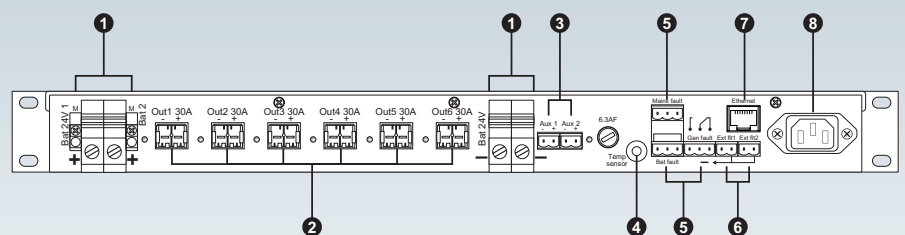
- Fault indication signal through LED's on the front side of the device and fault indication contact (potential-free changeover contact) on the rear side of the device.
- A temperature sensor adjusts the allowed charge current to the existing temperature in the PA cabinet.
- All commercially available lead-acid batteries can be used.
- Equipped with a switching power supply and digital charger unit.
- USB interface to configure operating parameters.
- Configuration software in scope of supply.

★

Technical data	ESP-2000 B	ESP-4000 B
End-of-charge voltage	approx. 27,1V DC	approx. 2x 27,1V DC
Charging current	16 A	2x 16 A
Power consumption	384 W	748 W
Power supply	230 V AC 50-60 Hz	
Battery capacity	65-320 Ah	2x 65-320 Ah
Dimensions (WxHxD)	483 x 44 x 358 mm, 1 RU	483 x 88 x 358 mm, 2 RU
Weight	5,3 kg	7,9 kg

- 1 Connection for two 24V batteries and 2 ports to balance the medium voltage
- 2 6 outputs for amplifier connection
- 3 Double socket for connection of the mains voltage control and other modules
- 4 Connection for temperature sensor
- 5 3 Outputs for signals (Mains-, Bat- and Gen-Fault)
- 6 2 inputs for external error signals
- 7 RJ-45 connector (Ethernet connection)
- 8 AC IEC connector inlet

### Rear view



### Model designations

EN 54-4 Emergency Power supply, 1 RU, with 6 outputs	ESP-2000 B
EN 54-4 Emergency Power supply, 2 RU, with 12 outputs	ESP-4000 B
Lead Acid Battery-Set, for external operation (65 Ah).	BA-140

# EMERGENCY POWER MANAGEMENT

CERTIFIED / COMPLIANT TO VDE 0833-4 / VDE 0828 / DIN EN 50849

# RCS



Corresponds to the standards:

**EN 54-4:2007, EN 12101-10, NFS 61940**

## Description

The emergency power manager ESP-1000 B allows in the event of a power failure the permanent emergency power supply of consumers with 24V according to EN 54-4.

All faults are indicated via a fault alarm contact, a buzzer and LEDs on the front panel.

The ESP-1000 B can be used as a mains and charger and is equipped with up to 6 circuits for deep discharge protection as well as temperature-controlled charging end voltage.

Please consider the following features:

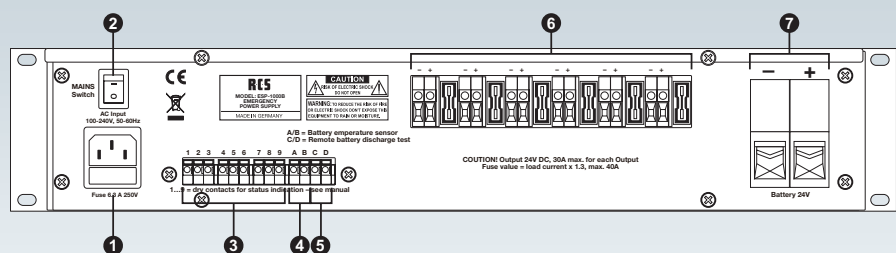
- Network fault monitoring with switchover to standby power mode.
- Monitoring of battery errors (with internal resistance measurement).
- The charging function with up to 8A allows a quick charging of the battery pack even with large capacities.
- Thermally regulated charging voltage increases the life of the batteries.

- Integrated deep discharge protection for 24V battery packs.
- 6 fused consumer outputs each with a maximum of 30 A in battery mode (fused with 40A external fuses).
- Fault signal contacts are realized in the event of a fault with falling relays.
- Fault signal via LEDs on the front of the device and fault signal contact (potential-free changeover contact) on the back of the device.
- All commercial lead-acid batteries can be used.
- Equipped with switching power supply and digital charging unit.

Technical data	ESP-1000 B
End-of-charge voltage	27,2V DC
Charging current	8 A
Power consumption	250 W
Power supply	230 V AC, 50-60 Hz
Battery capacity	32 - 150 Ah
Dimensions (WxHxD)	483 x 88 x 277 mm; 2 RU
Weight	6,3 kg

- 1 AC mains connection for IEC connector
- 2 On / off switch for mains operation
- 3 error contacts (charge, controller, battery error)
- 4 connection for temperature sensor (A / B)
- 5 remote control input for battery discharge test (C / D)
- 6 6 outputs (24V) for each max. 30A
- 7 Connection for 24V accumulators

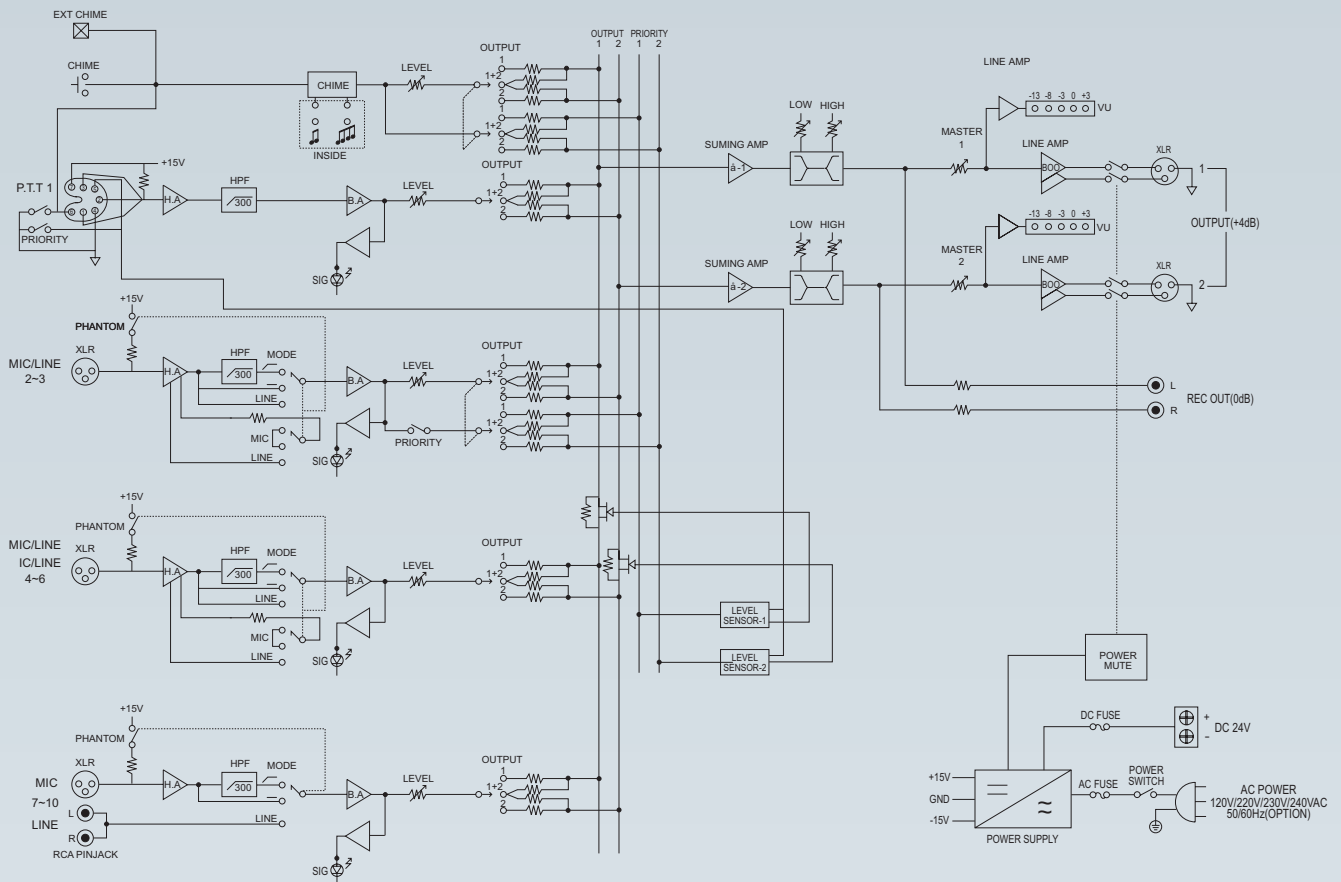
## Rear view



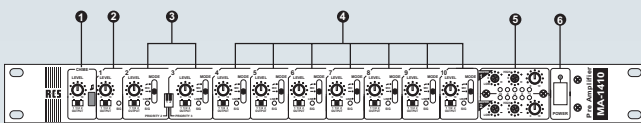
## Model designation

**EN 54-4 Emergency Power supply, 2 RU, with 6 outputs** ..... **ESP-1000 B**  
**Lead Acid Battery-Set, for external operation (65 Ah)** ..... **BA-140**

## Block Diagram

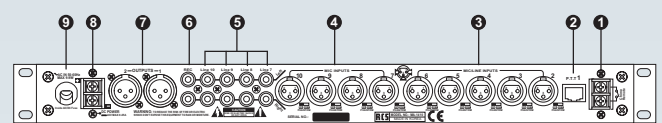


## Front view



- 1 Chime section with button for 2-tone chime (switchable to 4-tone chime), volume control and sliding switch for master output 1, 1 + 2, 2.
- 2 P.T.T. input section with volume control and selector switch for master output 1, 1 + 2, 2.
- 3 Input 2 – 3 section with priority switch, volume control, selector switch for master output 1, 1 + 2, 2 and selector switch for Mic/Line low-cut filter.
- 4 Input 4 -10 section with volume control, selector switch for master output 1, 1 + 2, 2 and selector switch for Mic/Line low-cut filter.
- 5 Master output section with output volume controls, dual-band equalizer and multicoloured 5-segment LED chains for output level.
- 6 Power switch with power LED.

## Rear view



- 1 Remote control connection for two-tone chime signal.
- 2 RJ-45 socket for connecting the VLM-100A microphone station with pre-announcement chime and priority.
- 3 Balanced XLR input sockets 2 to 6 with signal assignment for mic or line level.
- 4 Balanced XLR input sockets 7 to 10 for mic signal.
- 5 Unbalanced RCA sockets 7 to 10 for line signal.
- 6 REC output to RCA sockets.
- 7 Balanced XLR outputs for master output 1 and 2.
- 8 Terminal for 24 V DC power supply.
- 9 Power cord for 230 V AC.



## Description

The MA-1410B is a professional 10-channel mixer preamplifier for general sound reinforcement applications. It has 10 audio inputs with level control and output selector switches for master 1, master 2, master 1 + 2 outputs. Additionally, all 10 input channels have a MIC-LINE selector switch.

The device operates both on 230 V AC mains power and on 24 V DC power (e. g. emergency power supply).

Please consider the following features:

- The unit includes an electronic 2-tone chime (selection can be made on the device). The chime can be activated manually on the front panel or automatically as pre-announcement chime via the VLM-100 desktop microphone station (P.T.T. RJ 45 input).
- The chime type is switchable with jumper to 4 chime tone inside the device.
- The chime volume can be adjusted on the front panel. Additionally, there is another contact terminal on the rear which permits chime remote control.
- All input channels (10 + chime) have a selector switch on the front panel for switching the signal to master output 1, 1 + 2 or 2.
- The input channels 1 (P.T.T.), 2 and 3 (2 and 3 switchable) as well as the electronic chime automatically have priority (voice recognition) over input channels 4 - 10, which then are attenuated.
- Input channels 2 - 10 have a 3-position switch on the front panel which serves for the signal routing to LINE-MIC and the low-cut filter (300 Hz).
- All input channels have XLR sockets. Inputs 7 - 10 are additionally equipped with RCA sockets for line signals.

- Each input channel has a separate signal LED indicator.
- All MIC inputs have phantom power (+15 V DC). This means that both electret condenser microphones and balanced dynamic microphones can be connected to the XLR MIC inputs.
- Both master output channels have a dual-band equalizer and can be controlled separately on the front panel. Additionally, there is another output (REC-OUT) with RCA sockets.
- Multicoloured 5-segment master output level LED chains indicate the level for each channel.
- Apart from the numerous features such as balanced inputs and outputs, the 10-channel mixer preamplifier offers excellent sound characteristics, ease of installation and operation.

★

Technical data	MA-1410 B
Inputs	MIC: -50 dBu (2,45 mV)/5 kohms, balanced, phant. power LINE: -10 dBu (245 mV)/5 kohms, balanced LINE-Cinch IN: -10 dBu (245 mV)/10 kohms, unbalanced
Outputs	MASTER 1 + 2: NOR +4 dBu (1,23 V)/200 ohms, balanced REC: NOR 0 dBu (0,775 mV)/10 kohms, unbalanced
Frequency range	20 – 20.000 Hz, better than -0,5 dB
Signal-to-noise ratio	MIC: better than 60 dB, LINE: better than 75 dB
Cross Talk	MIC: better than 60 dB, LINE: better than 75 dB
THD	MIC: better than 0,05 %, LINE: better than 0,03 %
Power supply	AC 230 V, (50 – 60 Hz), DC 24 V
Power consumption	9,9 W
Dimensions (W x H x D)	483 x 44 x 200 mm, (19", 1 RU)
Weight	approx. 3,9 kg

## Model designation

10-Channel Mixer Preamplifier, (1 RU) ..... **MA-1410B**



### Description

The IMP-301 B is a professional 3-channel mixing preamplifier for general sound applications. It has 3 audio inputs with level control and an audio output. The device can be operated with DC 24V DC (eg. emergency power supply).

The IMP-301 B has three line inputs (RCA / 3.5mm jack / clamp) and a microphone input (XLR). All signals can be mixed together using the input potentiometer.

Please consider the following features:

- Line input via RCA, 3.5 mm jack and clamp.
- Rear line input parallel to the jack.
- Line output (symmetrical) via screw-plug terminal.
- Microphone input with phantom power (23 V).
- Ground lift jumper.
- 2-band tone control and volume control on the output.
- 3 LEDs can be controlled via 24 V DC.

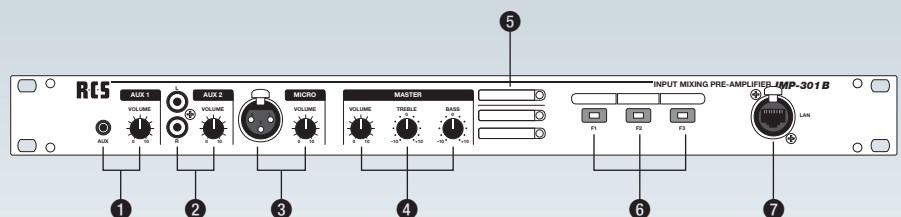
- Function keypad with 3 buttons (3 changeover contacts).
- Slot for optional further type D termination unit, such as IMD-001 A.
- Extremely flat design for rack cabinet installation, even the back cover.

★

Technical data	IMP-301 B
Inputs	MIC: -30 dBu (2,45 mV)/5 kohms, bal., Phantom-Power LINE: 0 dBu (245 mV)/5 kohms, unbal. LINE-Cinch IN: 0 dBu (245 mV)/10 kohms, unbal.
Outputs	MASTER: 0 dBu (775 mV)/200 ohms, bal.
Frequency range	20 – 20.000 Hz, better than -0,5 dB
Signal to noise ratio	MIC: better than 60 dB, LINE: better than 75 dB
Harmonic distortion	MIC: better than 0,05 %, LINE: better than 0,03 %
Power supply	DC 24V
Power consumption	1,2 W
Insulation class	IP 20
Dimensions (WxHxD)	483 x 44 x 70 mm; 1 RU
Weight	466 g

- 1 AUX (iPod®) input with volume control
- 2 cinch input with volume control
- 3 XLR input with volume control
- 4 Master output section with volume control, as well as treble and bass controls
- 5 LED status indicators
- 6 function keys
- 7 Slot for optional Type D connection unit

### Rear view



### Model designation

Mixer Pre-Amplifier 19" Rackpanel, 1 RU ..... **IMP-301 B**  
 Built-in Socket Modul RJ-45, (for IMP-301 B) ..... **IMD-001 A**

# FOUR TONE CHIME AND SIREN UNIT



## Description

The CS-110A four-tone chime and siren unit is used as an alarm (siren) and signal (chime) module in central units of audio systems. It can be controlled and activated simply through the buttons on the front panel or by means of logic controllers.

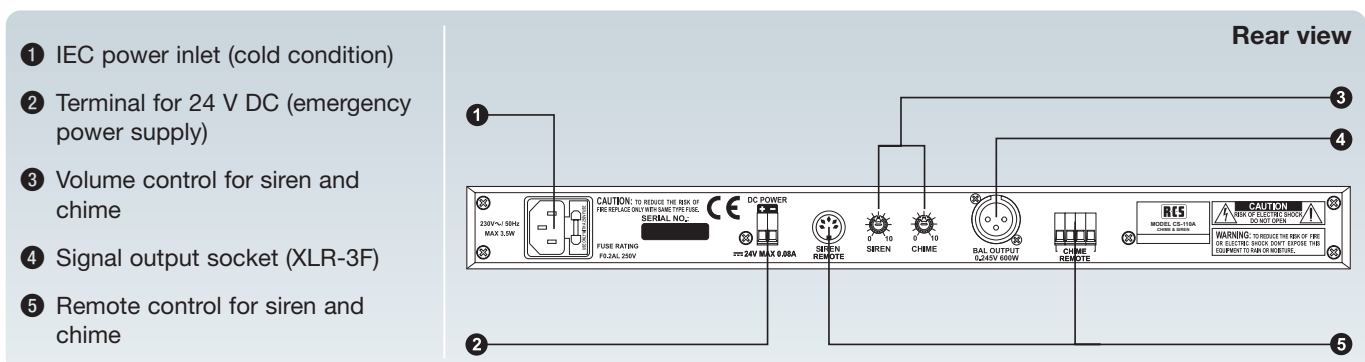
Please consider the following features:

- The use of high-quality digital electronics makes the device suitable for continuous operation as it is required for audio systems.
- Chime and siren can be activated by means of remote control. The device operates on mains power (230 V AC) as well as on DC power (24 V DC), for example, in the case of a power failure (emergency power supply).
- The alarm siren can sound a continuous tone, a manually modulated siren tone or a high-low tone. It is equipped with an automatic stop function, which means that it is switched off after the respective time has elapsed (continuous tone 1 minute, high-low 3 minutes).

- The pleasant and melodious chime can be played in four-tone, three-tone or two-tone mode.
- The volume of the siren and the chime can be adjusted separately on the front panel. The power switch has an LED. The device has a balanced XLR output.

★

Technical data	CS-110 A
Chime frequencies	440 Hz, 554 Hz, 655 Hz, 880 Hz
Siren frequencies	800 Hz
Audio output	more than 0,245 V (-10 dBm), 600 ohms balanced on XLR
Signal-to-noise ratio	better than 80 dB
Power consumption	3,5 W
Power supply	AC 230 V (50 – 60 Hz), DC 24 V
Remote control	Potential free contacts
Dimensions (WxHxD)	483 x 44 x 200 mm (19", 1 RU)
Weight	approx. 2,5 kg



## Model designation

Four-Tone Chime and Siren Unit, (1 RU) ..... **CS-110A**



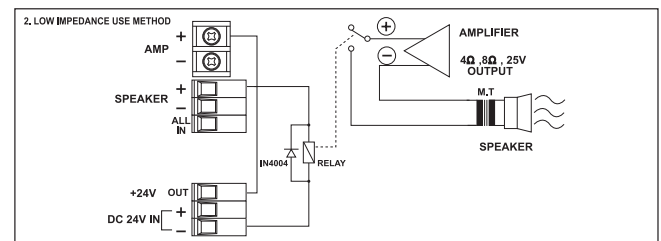
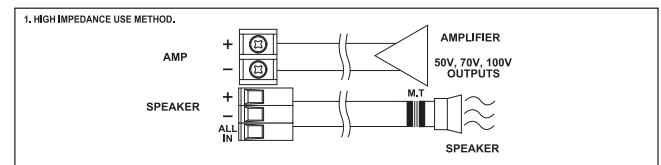
### Description

The SS-220P passive speaker selector enables routing of the amplifier output signal for up to 20 speaker zones, which can be activated individually, in groups or with the ALL-CALL function.

Please consider the following features:

- A total of 22 LEDs located on the front panel provide a very clear indication of the operating status of the device and of each active circuit.
- The speaker circuits can be activated selectively through switches on the front panel or ALL-IN inputs for control devices such as central fire alarm systems or control clocks.
- The device is incorporated in a 19" housing with an overall height of 2 RU.
- The device is powered with 24 V from the central rack system.
- Apart from the numerous features, the device is characterized by an extremely easy installation and operation.
- 1 A Relay, so at 100V with 100 W load.
- 24V DC for switching from Out to All-In.

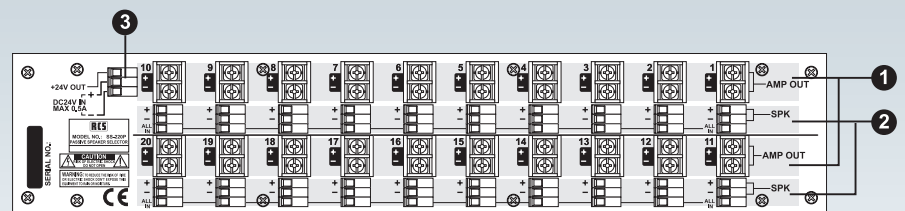
### Connection example



Technical data	SS-220P
Number of circuits	20 lines
Inputs	20 x amplifier IN, 20 x LS-OUT, 20 x ALL-IN
Power consumption	DC 24 V
Power supply	approx. 12 W
Dimensions (WxHxD)	483 x 88 x 200 mm (19", 2 RU)
Weight	approx. 4,0 kg

### Rear view

- 1 Signal input sockets, AMP-OUT.
- 2 Signal output sockets, LS-IN.
- 3 Terminal for DC power supply and DC output for ALL-IN inputs.



### Model designation

Speaker Selector, (2 RU) ..... **SS-220P**



## Description

By means of the NC-111 Ambient Noise Controller, the ratio of the desired signal (speech or background music) to unwanted extraneous signal (unwanted noise) can be considerably improved, e.g. in airports, railway stations, hotels, etc.

Please consider the following features:

- The device is supplied with the ND-011 Ambient Noise Detector, which is equipped with an XLR- or jack socket for connection of an electret or dynamic sense microphone.
- An adjustable reference level is used to set a lower limiter to the output level. A level that is below the reference level is not accepted.
- Filter performance (-width) is adjustable.

- The LED chain (-9 dB to +18 dB) on the front panel indicates the output level. There is also a clipping LED.
- The device includes an adjustable measuring band-pass filter with a range of 30 Hz to 15 kHz and a bypass switch for disabling the NC-111.
- The noise detector has a phantom power switching option and can be connected by means of an AF cable with a maximum length of 500 m.

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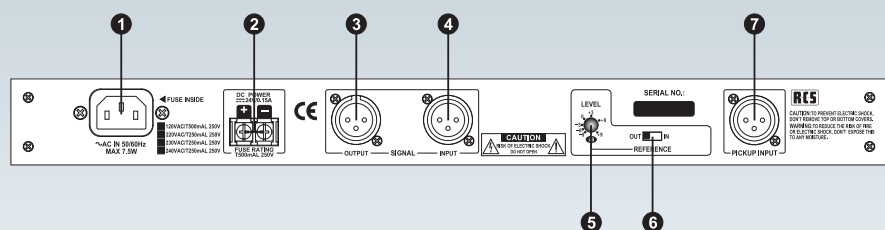
Figure shows ND-011 Ambient Noise Detector (supplied with the device)



Technical data	NC-111
Input impedance	0,775 V (0 dB), 30 kohms, balanced, on XLR
Output impedance	0,775 (0 dB), 600 ohms, balanced, onf XLR
Pick up impedance	0,775 (0 dB), 200 ohms, balanced, on XLR
Signal-to-noise ratio	better than 60 dB (DIN AUDIO)
Frequency range	20 – 20.000 Hz (-1 dB)
THD	better than 0,3 %
Width / Q control	0,5 to 3,5
Bypass	30 – 15.000 Hz
Phantom power	20 V DC
Power supply	230 /240 V AC/24 V DC
Power consumption	7,5 W / 24 V DC, 0,15 A
Dimensions (WxHxD)	NC-111: 483 x 44 x 200 mm (19", 1 RU)
Dimensions (WxHxD)	ND-011: 81 x 60 x 179 mm
Weight	NC-111: approx. 2,7 kg ND-011: approx. 0,5 kg

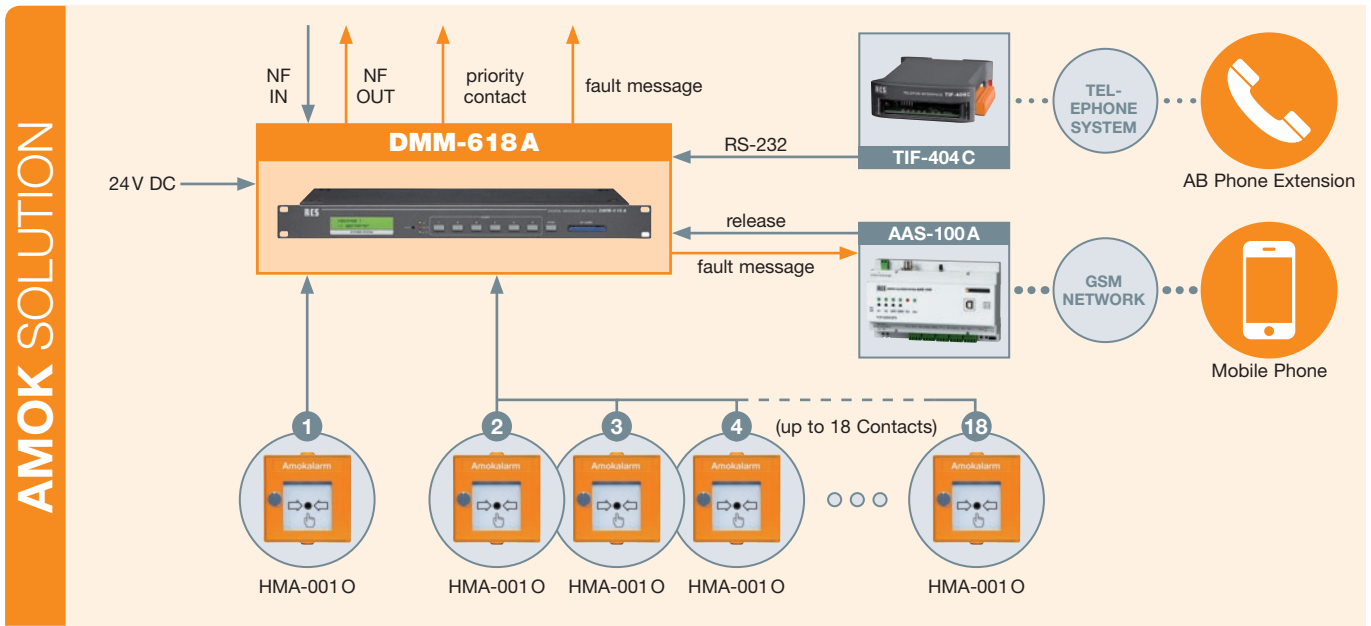
- 1 IEC power inlet (cold condition)
- 2 Terminal for 24 V DC (emergency power supply)
- 3 Balanced signal output socket.
- 4 Balanced signal input socket.
- 5 Control for reference level limiter
- 6 Switch for disabling the reference level limiter.
- 7 Balanced input for ambient noise detector.

## Rear view

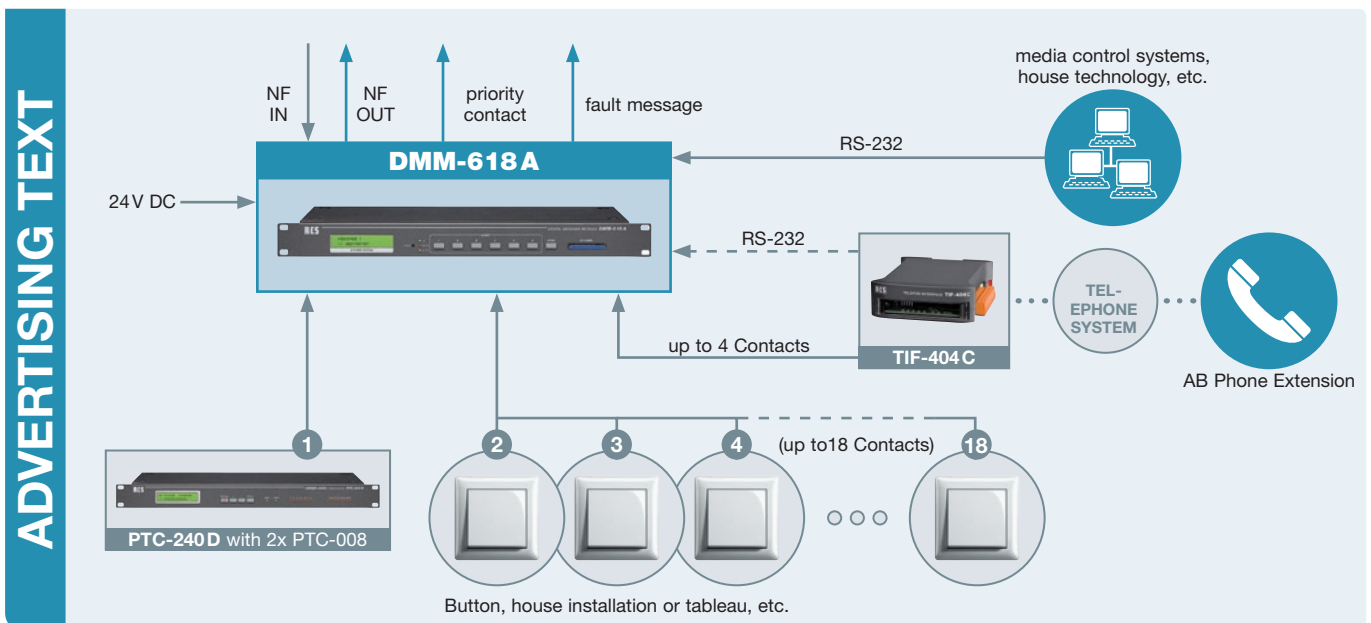


## Model designation

Ambient Noise Controller, (1 RU) incl. Ambient Noise Detector ND-011 ..... **NC-111**



- FEATURES**
- Features of the applications:**
- + 18 texts triggered, via potential free contacts or RS-232
  - + 6 texts can be triggered directly via buttons on front panel
  - + Fault message output with changing switch contact
  - + NF audio input and output with priority
  - + Connection of up to 18 manual call points lines possible
  - + 4 texts about contacts from TIF-404 C triggered (by election)
  - + Application and integration into existing systems possible
  - + Monitored text and signal memory
  - + Controlling of media techniques possible





## Description

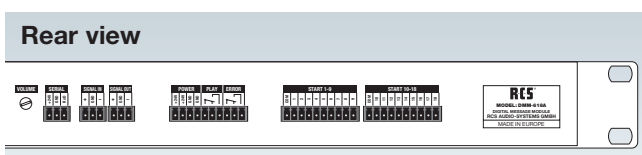
The Digital Message Module is a universal flash memory module for MP3 files. It can be operated in two operating modes, as a voice memory for alarm systems or as an advertising text device. Because its flash memory is permanently monitored DMM-618A acts as an ideal addition to any existing voice evacuation or paging system.

There are 7 buttons on the front of the device. The buttons 1-6 start the respective text, the button „Stop“ stops the playback. Furthermore, a reset button is provided. Up to 18 messages can be triggered remotely, for example from an system clock (e.g. PTC-240D), from AAS-100A or any other NO contact. A jumper is used to switch between impulse triggering or the permanent closure of a contact. Through a jumper you can set the operation as a pulse or permanent contact. Furthermore, a priority control (text 1 top priority, text 18 lowest priority), an additionally switched NF output and a priority contact are available.

A display informs about the operating states of the device (fault message, text started, ID tags). A potential-free changeover contact is available for a fault message. The text lengths of the files depend on the size of the SD memory card. Here you can use cards up to 64 GB.

## Serial output

All state changes in the contacts are offered in a serial signal in addition to the dry contacts themselves. The signal level matches with a TTL-signal. Combined with a TIF-404 C telephone interface unit the contacts can be activated by RS-232 directly.



## Model designation

Digital Message Module, (1 RU)..... **DMM-618A**

### Application as monitored speech memory:

- + for Amok signaling
- + to voice alarming
- + as a supplement to existing PA systems

### Application as an advertising text unit:

- + in department stores and supermarkets
- + in Restaurants
- + in medical practices, and much more...

Please consider the following features:

- Ideally suited as an addition to existing voice evacuation and paging systems. Combines perfectly with AAS-100A, TIF-404 C, PTC-240 D and all system components of the VARES-Series range.
- Can be combined with „VARIO-LINE“ desktop mixing amplifiers and 3rd party paging systems.

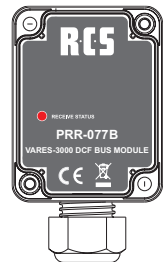
Technical data	DMM-618A
Power supply	24 V DC, power supply (optional)
Current consumption	0,55 A
Release	6 Buttons, 18 contacts
Display	2-line LCD-Display, cleartext
Memory media	CF-Card (FAT Format)
sampling rate	min. 128 kB/Sec.
AF output	transformer balanced
Alarm output	potential free, changing switch
Connections	Screw-type terminal
Serial output	RS-232, TTL-Level
Matching power supply (optional)	PSU-048/24
Dimensions (WxHxD); Weight	483 x 44 x 171 mm; 1 RU; approx. 2 kg



## EVENT & TIME-SYNCHRONISATION



DCF-Receiver  
PRR-077 B



### Description

This radio clock PTC-240D enables you to drive and control up to 130 side clocks on 2 side clock lines. These operate independently from each other in impulse operation. The optional relay cards PTC-008B allow additional time-dependent monitoring of up to 16 relay-switch outputs.

You can easily set up the basic functions of the main clock on the front panel of the device. For any additional programming of events you are supplied with clearly structured computer configuration software.

The main clock is synchronised every hour through the DCF-receiver module PRR-077 B. The receiver as well as the directional mounting angle accord to the degree of protection IP 65. Therefore they are suitable for mounting in receiver-heavy outside areas.

Please consider the following features:

- Monitoring of the NU-lines regarding overload or short circuit.
- Storing the position of the slave clock in case of power failure without extra battery. Slave clocks be reset after return of the mains voltage.
- Monitored 24V emergency power-input, in order to maintain the impulse of the side clock.
- Freely programmable allocations of all relay contacts.
- All daily events are recorded in a "daily list".

- Automatic conversion from summer time to winter time.

Furthermore you can apply the main clock PTC-240D in combination with the RCS VARES-3000 System.

Any special functions such as automatic timing announcements for selected area's as well as free programming of all relay contacts for up to 250 events are possible with this main clock.

★

Technical data	PTC-240D
Display	2-line LCD-Display, cleartext
Power reserve	10 years
Capacity / Number of NU-Lines	0,5 A/line; 65 auxiliary clocks per line
Operation mode NU-Lines	Impulse minutes, 2 seconds
Pulse repetition	Normal: 1/min. adjust: 10/min.
Relay contacts	up to 16 relay switch outputs
Pulse length	1 – 59 seconds (digital switchable)
Contact capacity	6A/160 V each channel
Interfaces	RS-485-Bus
Memory capacity	253 (events)
Time base	Quarz, optional DCF-77
Power supply	24 V DC / max. 2 A
Dimensions / Weight	483 x 44 x 171 mm, 1 RU / approx. 2 kg

### Configuration Programming adapter PCA-300

Programming adapter to configuring VARES-3000 Main Clock PTC-240D (if Main Clock PTC-240D is in use without the PSS-224C).

### Model designations

**Main Clock**, incl. side clock control, second output, etc. .... **PTC-240 D**  
**DCF-Receiver Module**, dimensions 94x65x58 mm ..... **PRR-077 B**

#### optional Accessories

**Relay Card**, for Main Clock PTC-240D ..... **PTC-008 B**  
**Main Clock Programming adapter**, for main clock PTC-240D ..... **PCA-300**  
**Main Clock AC adaptor plug 24 V**, 1A, for main clock PTC-240D ..... **PSU-024/24**

# ANALOGUE SLAVE CLOCKS



## Description

The analogue slave clocks can be operated indoor in combination with the system clock PTC-240D from the RCS VARES-3000 system. With the classic design, this slave clocks can be integrated harmoniously into each architecture.

The one-sided clock variant for wall or ceiling mounting is composed of a clock with back wall and a wall bracket. They can be hung up with a single-point fixing to the wall.

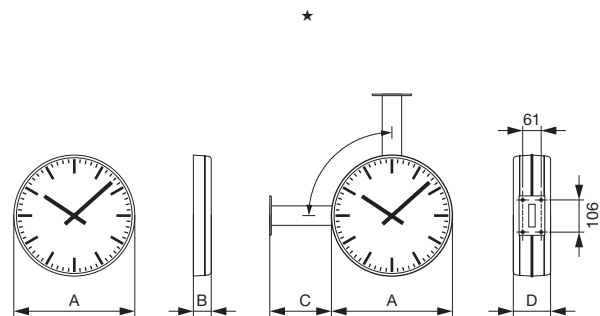
In the double-sided version two one-sided clocks with a wall bracket are assembled together..

Please consider the following features:

- One-sided for mounting on the wall with a single-point attachment.
- Clockwork: 24V DC, 1/1 minute impulse.
- 24V DC pole changing minute impulse, 7.5 mA current consumption.
- Single-sided clocks for wall or ceiling mounting is com-

posed of a clock with back wall and a wall bracket

- Watch dial models with Arabic numerals. Other design e.g. without numbers or with red second hand is available on request.
- Additional slave clocks in square, ball-punched or metal versions are available on request.



Models	A	B	C	D
NUR-302/ NUR-302 D	Ø 300/304 mm	45 mm	120 mm	93 mm
NUR-402/ NUR-402 D	Ø 400/406 mm	58 mm	210 mm	119 mm

Technical data	NUR-302	NUR-302 D	NUR-402	NUR-402 D
Control	24V DC pole changing minute pulse, 7.5 mA current consumption			
Insulation class	IP 52			
Pulse length	1/1 minute pulse			
Dial	white acrylic glass dial, black lettering (Arabic numerals)			
Housing color	white			
Material	high-quality ABS plastic with acrylic glass cover, wall bracket made of stainless steel			
Diameter Ø	300 mm	304 mm	400 mm	406 mm
Case depth	45 mm	93 mm	58 mm	119 mm
Weight	0,7 kg	2,9 kg	1,2 kg	4,25 kg

## Model designation

- Slave Clock, Ø 300 mm, one-sided**, analogue, white, plastic, Dial Arabic numerals, 24V. .... **NUR-302**
- Slave Clock, Ø 400 mm, one-sided**, analogue, white, plastic, Dial Arabic numerals, 24V ..... **NUR-402**
- Slave Clock, Ø 300 mm, double-sided**, analogue, white, plastic, with acrylic glass cover, Dial Arabic numerals, 24V, incl. wall bracket..... **NUR-302 D**
- Slave Clock, Ø 400 mm, double-sided**, analogue, white, plastic, with acrylic glass cover, Dial Arabic numerals, 24V, incl. wall bracket..... **NUR-402 D**



Power supply 230V/AC or 24V DC



## Description

GEQ-2131 graphic equalizer is a 2 RU rack mounting device offering a 31 band equalizer. The 45 mm faders on the front plate can be adjusted with a range switch (+/- 6 dB or +/- 12 dB) and engage at the 0 dB position.

Because of its 24 V DC input on the rear panel GEQ-2131 is ideally suited to be used in voice evacuation systems that sport an additional battery based emergency power supply unit.

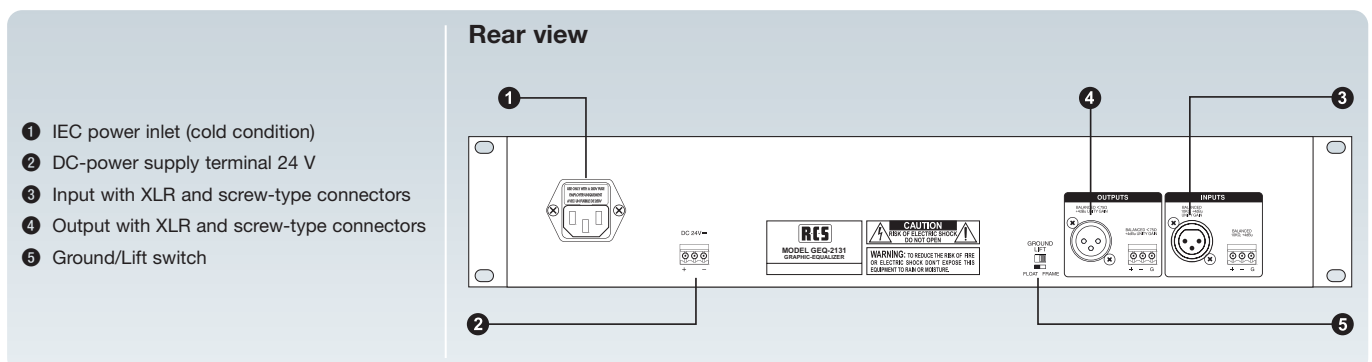
Please consider the following features:

- 31 band graphic equalizer with high additional pass filter (80 Hz, 12 dB/octave).
- A bypass switch allows to compare the original signal with the equalized signal.
- Input and output are implemented with symmetrical 3-pin Phoenix clamps and XLR connectors in parallel.

- LED clipping indicator on the front panel flashes when an input signal reaches 5 dB below clipping.

★

Technical data	GEQ-2131 A
Input sensitivity	0,775V (0dBm)
Input impedance	20 kohms, balanced
Inputs	XLR, screw-type connectors balanced
Output impedance	0 dB / < 600 ohms
Outputs	XLR, screw-type connectors balanced
Bandwidth	1/3 Oct 1 x 31 Band
Frequency range	20Hz~20kHz (±1dB)
THD	0.01% @ 1kHz
Signal-to-noise ratio	> 85dB
High-pass filter	80Hz (18dB/oct)
Range (band selection)	±6dB or ±12dB
Power supply	220V ~ 240V/AC, 50~60 Hz or 24 V DC
Dimensions (WxHxD)	483 x 88 x 280 mm (2 RU)
Weight (net)	4,5 kg



## Model designation

Graphic-Equalizer, (2 RU, 1 CH, 31-Band)

**GEQ-2131 A**



## Description

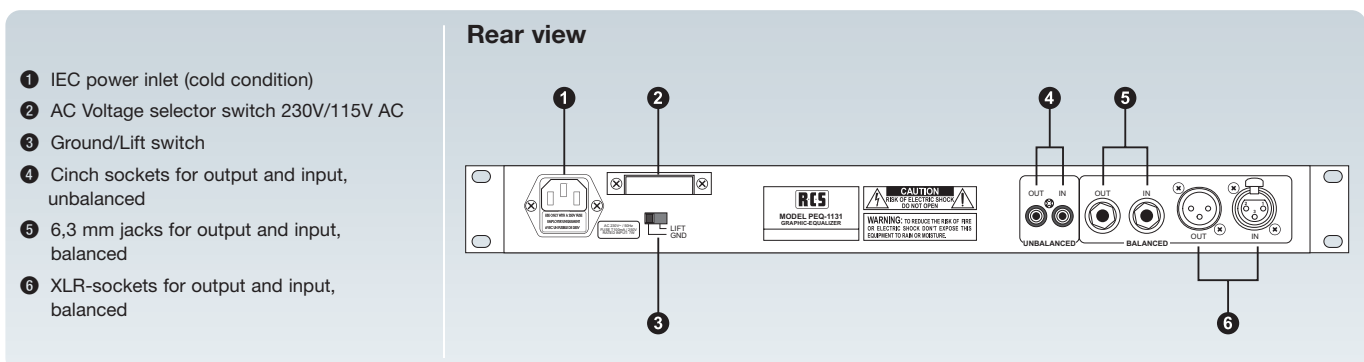
The graphic equalizer PEQ-1131 is a 1 RU rack mounting device. It is equipped with 31 bands (mono) with a range switch for  $\pm 6\text{dB}$  or  $\pm 12\text{dB}$  (cut / boost) and 20mm center faders.

Please consider the following features:

- The 31 band graphic equalizer has a switchable high-pass filter (40Hz, 12dB/Oct.)
- By a special "bypass" switch with LED display, the unaltered input signal may be compared to the altered output signal for any channel.
- For every channel, as possibility for input and output connection, a 6.3 mm jack socket, a XLR socket (balanced) and a RCA socket (unbalanced).
- One clip LED per CH lights up, if the signal is 5 dB below clipping.
- At the request of 24V DC operation (Please inquire).

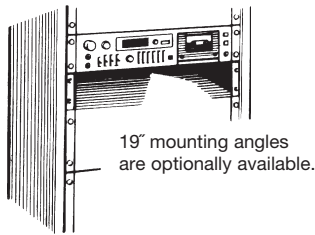
- The power supply takes place over an IEC power socket on the rear side of the device. The power switch is on the front side.
- Additionally, a ground/lift switch on the rear side helps avoiding possibly occurring hum loops.

Technical data	PEQ-1131
Input sensitivity	0,775V (0dBm)
Input impedance	20 kohms, balanced; 15 kohms, unbalanced
Inputs	XLR, jack 6,3 mm, RCA
Output impedance	< 600 ohms
Outputs	XLR, jack 6,3 mm, RCA
Bandwidth	1/3 oct 1 x 31 band
Frequency range	20Hz - 50kHz @ -3dB
THD	0.02% @ 1kHz
Signal-to-noise ratio	> 93dB
High-pass filter	40Hz 12dB/octave
Low-pass filter	16kHz 12dB/octave
Range (band selection)	$\pm 6\text{dB}$ or $\pm 12\text{dB}$
Power supply	220V - 240V/AC, 50-60 Hz
Dimensions (WxHxD)	483 x 88,8 x 200 mm (2 RU)
Weight (net)	3,7 kg



## Model designation

Graphic-Equalizer, (1 RU, 1 CH, 31-Band) ..... **PEQ-1131**



## INPUT-SECTION

- Top-quality mixer with 6 mono input channels, which can be supplied as MIC over XLR sockets or as LINE over 6.3 mm jack sockets. Channels 5/6 & 7/8 may also be supplied as stereo input channels, each over two 6.3 mm jack sockets. Channels 9/10 & 11/12 can be operated both mono (L) and stereo (L/R) over 6.3 mm jack sockets.
- The mono channels 1-4 have amplification pre-controls for MIC "Gain" and for LINE "Trim" as well as a 3-band CH-EQ and a low-cut switch (75 Hz). Channels 5/6 & 7/8 feature a pad switch (-20 dB) and a 3-band CH-EQ. Channels 9/10 & 11/12 are equipped with a 3-band CH-EQ. There are panorama controls for mono and balance controls for stereo.
- Pre-listening of all channels is possible over an adjustable headphone output as well as the "Solo function" of the CH. The mixer also features a pre-fader and a post-fader AUX way as well as allocation selector switches for Main L/R per channel and SUB 1/2 for the alternative total output.
- Phantom power is centrally switchable for all MIC inputs (+48 V DC).

## MASTER-SECTION

- Two stereo output sockets (XLR balanced and 6.3mm jack unbalanced) for main output over stereo fader (L+R) with LED meter as well as two alternative output sockets (6.3mm jack unbalanced) over SUB-1/2-fader.
- 2 RCA input sockets with input control and 2 RCA output sockets for 2-track IN/OUT per L/R. 2 unbalanced AUX sends and 2 adjustable AUX returns are available. The AUX returns can be switched on to the monitor way.

## HIGHLIGHTS

- A switchable digital effects board allows adding 16 high-grade effects with an adjustable DSP master to the sum and with a switch to the monitor way also. This DSP is switchable ON/OFF by a foot switch. A mono out jack socket with level control makes another pre-amplified signal output possible. The mixer FMX-1202 is designed to be tabletop unit as well as for integration into 19" racks or flight-cases. The 19" mounting angles „RMK-12" (8 RU) are optionally available.

Technical data	FMX-1202
Input sensitivity	MIC -55dBu (mono) 1,3 kohms (balanced)
	LINE -35dBu (mono) -20dBu (stereo)
	all other inputs >10 kohms
Output sensitivity	Tape output 1,0 kohms
	FX-returns or Aux: 10 kohms
	all other outputs <100 ohms
Signal-to-noise ratio	better than 90dB
Crosstalk	better than 85dB
Frequency range	20Hz – 60kHz +0 / -1,5dB
Channel equalizer	Highs: 12kHz shelving ±15dB
	Mids: 3,0kHz peaking ±12dB
	Lows: 80Hz shelving ±15dB
	Low Cut: 18dB/Okt. @ 75Hz
Phantom power	+48V DC
Power supply	220V – 240V/AC, 50–60 Hz
Input power	22 W
Dimensions (WxHxD)	305 x 354 x 72mm (without edges and little feet)
Weight	4,7 kg

## Model designations

Audio Mixer, 12 channels	FMX-1202
19" Rack-Mounting-Kit, 8 RU	RMK-12



## ● INPUT-SECTION

- This mixer features 10 mono input channels, which can be supplied as MIC over XLR sockets or as LINE via 6.3 mm jack sockets. Channels 11/12 & 13/14 can be operated over 6.3 mm jack sockets both mono (L) and stereo (L/R).
- The mono channels 1-10 have amplification pre-controls for MIC „Gain“ and for LINE „Trim“ as well as a 4-band channel equalizer and a low cut switch (75 Hz). Channels 11/12 & 13/14 are equipped with LINE trim controls ( $\pm 20$  dB) and a 3-band CH-EQ. There are panorama controls for mono and balance controls for stereo.
- Pre-listening of all channels is possible via an adjustable headphone output as well as the “Solo function” of the CH. 2 pre-fader and 2 post-fader AUX ways and allocation selector switches for CH mute, sub 1/2, sub 3/4 and main L/R per CH.
- CH-insert for channels 1-10 PRE-fader/PRE-EQ and master L/R-insert PRE-graphic-EQ (e.g. feed-in point for compr./lim./gate). CH 1-8 offer direct-out jack sockets.
- Phantom power is centrally switchable for all MIC inputs (+48 V DC).

## ● MASTER-SECTION

- For main output are two stereo output sockets, which can be supplied by a stereo master fader (L+R) with LED meter display and a switchable 7-band graphic-EQ. The section also features the group-faders SUB-1-4 with alternative output sockets and L/R separate connection to the master sum. The mono main out (XLR) with switchable 75 Hz LPF serves as subwoofer output.
- The master section also has two RCA input sockets with level input controls, switchable to the master, and two RCA output sockets (2 TR IN/OUT per L/R). Master-send controls are available for the AUX ways respectively.

## ● HIGHLIGHTS

- A switchable 24-bit digital effects board allows adding 99 high-grade effects with 3 adjustable master-returns to the sum as well as to the 2 monitor ways. The DSP is comfortably to handle over a digital display and an up/down push-button and foot switch. “Stereo output jack sockets” with level controls enable another pre-amplified signal output.
- The mixer FMX-1402 R is designed for installation into 19"-racks (9 RU) or flight-cases.

Technical data	FMX-1402 R
Input sensitivity	MIC -55dBu (mono) 1,3 kohms (balanced)
	Line -35dBu (mono), -20dBu (stereo)
	all other inputs >10 kohms
Output sensitivity	Tape Output 1,0kohms
	all other outputs <100 ohms
Signal-to-noise ratio	better than 90 dB
Crosstalk	better than 85 dB
Frequency range	20Hz – 60kHz +0 / -1dB
Channel equalizer	Highs: 12kHz shelving $\pm 15$ dB
	High mids: 3,0kHz peaking $\pm 12$ dB
	Low mids: 800Hz peaking $\pm 12$ dB
	Lows: 80Hz shelving $\pm 15$ dB
	Low Cut: 18dB/Okt.@ 75Hz
Phantom power	+48V DC
Power supply	220V – 240V/AC, 50–60 Hz
Input power	50 W
Dimensions; Weight	(WxHxD) 483 x 370 x 140mm (9 RU) / 7,1 kg

## Model designation

Audio Mixer, 19" (9 RU), 14 channels . . . . . **FMX-1402 R**



## INPUT-SECTION

- Top-quality mixer with 10 mono input channels, which can be supplied as MIC over XLR sockets or as LINE over 6.3 mm jack sockets. Channels 9/10 & 11/12 may also be supplied as stereo input channels, each over two 6.3 mm jack sockets. Channels 13/14 & 15/16 can be operated both mono (L) and stereo (L/R) over 6.3 mm jack sockets.
- The mono channels 1-8 have amplification pre-controls for MIC „Gain“ and for LINE „Trim“ as well as a 4-band CH-EQ and a low cut switch (75 Hz). CH 9/10 & 11/12 feature a pad switch (-20 dB) and a 3-band CH-EQ. CH 13/14 & 15/16 are equipped with a 3-band CH-EQ. There are panorama controls for mono and balance controls for stereo.
- Pre-listening of all channels is possible over an adjustable headphone output as well as the “Solo function” of the CH. The mixer also features a pre-fader and a post-fader AUX way as well as allocation selector switches for Main L/R per channel and additionally SUB 1/2 for the alternative total output.
- CH insert for channel 1 and 2 PRE-fader/PRE-EQ allows feeding in external signals (e.g. compr./lim./gate).
- Phantom power is centrally switchable for all MIC inputs (+48 V DC).

## MASTER-SECTION

- Two stereo output sockets for main output can be supplied by a stereo master fader (L+R) with LED meter display. Two alternative output sockets (6.3 mm jack unbalanced) are fed over separately adjustable SUB-1- and SUB-2-faders.
- 2 RCA input sockets with level input controls and two RCA output sockets for 2-track IN/OUT per L/R. 2

unbalanced AUX sends and 2 adjustable AUX returns are available. The AUX returns can be switched on to the monitor way.

## HIGHLIGHTS

- A switchable digital effects board allows adding 16 high-grade effects with an adjustable DSP master to the sum and with a switch to the monitor way also. An additional mono out jack socket with a level control enables another pre-amplified signal output. FMX-1602 is designed to be tabletop unit or for integration into 19” racks. The 19” mounting angles „RMK-16” (8 RU) are optionally available.

Technical data	FMX-1602
Input sensitivity	MIC -55dBu (mono) 1,3 kohms (balanced) LINE -35dBu (mono), -20dBu (stereo) all other inputs >10 kohms
Output sensitivity	Tape Output 1,0 kohms all other outputs <100 ohms
Signal-to-noise ratio	better than 90dB
Crosstalk	better than 85dB
Frequency range	20Hz – 60kHz +0 / -1,5dB
Channel equalizer	Hlghs: 12kHz shelving ±15dB High mids: 3,0kHz peaking ±12dB Low mids: 800Hz peaking ±12dB Lows: 80Hz shelving ±15dB Low Cut: 18dB/Okt.@ 75Hz
Phantom power	+48V DC
Power supply	220V – 240V/AC, 50–60 Hz
Input power	25 W
Dimensions (WxHxD)	411 x 354 x 72mm (without edges and little feet)
Weight	5,7 kg

## Model designations

Audio Mixer, 16 channels	<b>FMX-1602</b>
19” Rack-Mounting-Kit, 8 RU	<b>RMK-16</b>



## INPUT-SECTION

- Professional power-mixer with nine mono LINE inputs (CH 8/9 & CH 10/11 also adaptable as stereo) over 6.3 mm jack socket and nine mono MIC inputs over XLR socket, which can be transmitted to monitor out, record out and master out (L/R or bridge L+R).
- 2 stereo inputs (TAPE in as RCA socket and AUX in 6.3 mm as jack socket) with combined volume control can be transmitted to the master section. Another combined control makes it possible to additionally put these two signals on the monitor way.
- All inputs are equipped with input level, PAN, effect (DSP), monitor as well as highs, mids, and lows controls.
- PAD switches (-10 dB) for CH 1-7 in order to damp the input signal.
- Phantom power for all MIC inputs (+48 V DC) centrally switchable.

## AMPLIFIER-SECTION

- Apportionment of the 3 integrated amplifiers: 2 x 300 W @ 4 ohms for stereo operation, each with two 6.3 mm jack output sockets L+R connected in parallel, or 1 x 600 W @ 4 ohms for mono operation over a 6.3 mm jack output socket L+R (bridged). Additionally, one power amplifier with 300 W @ 4 ohms is available for monitor operation with two 6.3 mm jack socket outputs connected in parallel.

## EFFECT-SECTION

- Effects processor with adjustable effect values such as Reverb-Time (0-10ms), Delay-Time (0-1000ms), Delay-Feedback (0-100%) and Delay/Reverb balance control. The effects can be added to the monitor way and separately to the master out (L/R and bridged L+R). The effects may be externally switched ON/OFF via the foot

switch jack socket. Effect-send AUX for external effects devices.

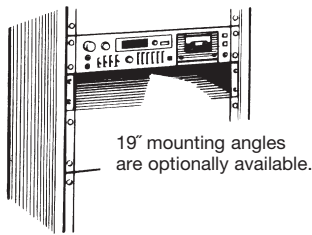
## MASTER-SECTION

- The mixer features three 7-band graphic equalizers, relating to stereo master L/R, mono master L+R (bridged) and monitor master, as well as monitor out and main L/R out.
- Furthermore, the mixer has master level controls with LED meter displays and a mode switch for selecting between mono L+R (bridged) and stereo L/R.
- Monitor-Out and Main L/R-Out.

Technical data	PMX-911 R
Output power at 4 ohms	3 x 300W (L/R/monitor)
Output power at 8 ohms	3 x 200W (L/R/monitor)
THD	0,05% (MIC input to power-amp output)
Frequency range	20Hz-20 kHz
Input sensitivity	MIC: -50dBu; LINE (1-7): -20dBu; LINE (8-11): -10dBu; AUX: -10dBu; TAPE: -10dBu
Output sensitivity	Main-Out: +4dBu; Monitor-Out: +4dBu; EFX-Out: +4dBu; Rec-Out: -10dBu
Channel equalizer	Highs: 12kHz ±15dB shelving; Mids: 2,5kHz ±12dB peaking; Lows: 80Hz ±15dB shelving
2 x Master & 1 x Monitor 7-Band-graphic-equalizer	125Hz, 250Hz, 500Hz, 1kHz, 2kHz, 4kHz, 8kHz
Signal-to-noise ratio	better than 90 dB
Crosstalk	better than 90 dB
Phantom power	DC 48V centrally switchable
Power supply	220V - 240V/AC, 50-60 Hz (fuse T6,3A)
Input power	1350 W
Dimensions (WxHxD)	483 x 205 x 270 (19", 5 RU)
Weight	15,3 kg

## Model designation

**Power-Mixer, 3 x 300 W output, 19" (5 RU) , . . . . . PMX-911 R**



## INPUT-SECTION

- 6 mono input channels can be supplied as MIC over XLR sockets or as LINE over 6.3 mm jack sockets. CH 7/8 & 9/10 can be operated mono (L) and stereo (L/R). CH 11/12 & CH 13/14 used as stereo AUX returns or as LINE level CH.
- CH 1-6 have pre-amplifying controls for MIC "Gain" and for LINE "Trim". CH 7/8 & 9/10 have input level switches. CH 1-3 are equipped with low-cut switches and a 3-band channel-EQ with semi-parametric mids. CH 4-10 feature a 3-band CH-EQ. There are panorama controls for mono and balance controls for stereo CH (except for CH 11-14).
- Pre-listening to all CH and monitor sum, main L/R, mono out and AFL/PFL is possible with an adjustable headphone output. 2 pre-fader and one post-fader AUX ways per CH as well as CH-insert for CH 4-6 PRE-Fader/PRE-EQ.
- Phantom power is centrally switchable for all MIC inputs.

## AMP.-/ MASTER-SECTION

- The main amplifier output (L/R, each 300 W @ 4 ohms) has 2 speak-on output sockets or 2 jack sockets, connected in parallel, which can be adjusted by a stereo master fader (L+R) over a LED meter display and a graphic-EQ L/R. Amp-mode, either L+R monitor or L/R stereo, selectable.
- 2 RCA in-/output sockets with level control and solo switch serve for 2-track IN/OUT (L/R). A mono-fader with switchable LPF serves for subwoofer-out, main L/R and monitor pre-amp out for external power amplifiers.

## EFFECT-SECTION

- A switchable 24-bit digital effects board enables to add 99 high-grade effects with a DSP master fader to the sum and with another control also to the monitor way. Easy to handle over digital display with up/down push-button.

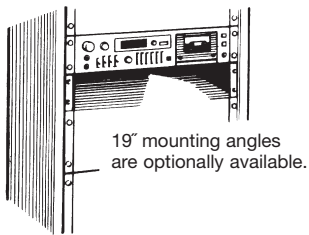
## HIGHLIGHTS

- Use of the internal power amplifier and the master EQ automatic switch-off of the mixer section over amp-input.
- The mixer PMX-614 is designed to be tabletop unit or for integration into 19" racks. The 19" mounting angles "RMK-14 P" (9 RU) are optionally available.

Technical data	PMX-614
Input sensitivity	Mic In: -55dBm (1,38mV), 50-600 ohms
	Line In: -35dBm (13,8mV), 600 ohms
	Stereo In: 0 dBu (775mV), 600 ohms
Output power	2x 300W/450 at 4 ohms, 2x 200W/340 at 8 ohms
Output sensitivity	Tape-Out (L/R): 600 ohms, -10dBu (245mV) all other outputs: 600 ohms, +4dBu (1,23V)
Signal-to-noise ratio	better than 97dB
Crosstalk	better than 90dB
Frequency range	20Hz - 20kHz +1 / -2dB
Channel equalizer	Highs: 12kHz shelving ±15dB
	Mids: 2,5kHz peaking ±12dB
	Mids for CH 1-3 semiparam. 100Hz-8kHz ±12dB
	Lows: 80Hz shelving ±15dB
	Low Cut: 18dB/Okt. @ 75Hz
Phantom power	+48V DC
Power supply	220V - 240V/AC, 50-60 Hz
Input power	900 W
Dimensions (WxHxD); Weight	470 x 405 x 148mm / 16,0 kg

## Model designations

**Power-Mixer**, 14 channels, 600 W. .... **PMX-614**  
**19" Rack-Mounting-Kit**, 9 RU. .... **RMK-14 P**



## INPUT-SECTION

- 8 mono input CH, which can be supplied over MIC (XLR sockets) or LINE (6.3 mm jack sockets). CH 9/10 & 11/12 can be operated mono (L) and stereo (L/R). CH 13/14 & CH 15/16 may be used as stereo AUX returns or LINE level CH.
- CH 1-8 have pre-amplifying controls for MIC "Gain" and LINE "Trim". CH 9/10 & 11/12 have an input level switch. CH 1-4 are equipped with low-cut switches and a 3-band CH-EQ (semi-parametric mids). CH 5-10 feature a 3-band CH-EQ. There are panorama controls for mono and balance controls for stereo channels (except for CH 13-16).
- Pre-listening to all channels and listening to monitor sum, main L/R, mono out and AFL/PFL is possible with an adjustable headphone output. 2 pre-fader and one post-fader AUX ways per CH and CH-insert for CH 5-8.
- Phantom power is centrally switchable for all MIC inputs.

## AMP.-/ MASTER-SECTION

- The main amplifier output (L/R, each 600 W @ 4 ohms) has two speak-on output sockets or two jack sockets connected in parallel, adjustable by a stereo master fader (L+R) over a LED meter display and a graphic-EQ L/R. Amp-mode, L+R monitor or L/R stereo selectable.
- 2 RCA in-/output sockets with level control and solo switch serve for 2-track IN/OUT (L/R). A mono-fader with switchable LPF serves for subwoofer out, Main L/R and monitor pre-amp out for external power amplifiers.

## EFFECT-SECTION

- A switchable digital effects board enables to add 99 high-grade effects with a DSP master fader to the sum and to the monitor way. Easy to handle via digital display with up/down push-button.

## HIGHLIGHTS

- Use of the internal power amplifier and the master EQ automatic switch-off of the mixer section over amp-input.
- The mixer PMX-1216 is designed to be tabletop unit or for integration into 19" racks. The 19" mounting angles "RMK-16P" available on option.

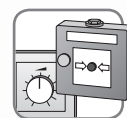
Technical data	PMX-1216
Input sensitivity	Mic In: -55dBm (1,38mV), 50-600 ohms
	Line In: -35 dBm (13,8mV), 600 ohms
	Stereo In: 0 dBu (775mV), 600 ohms
Output power	2x 600/900W at 4 ohms; 2x 350/520W at 8 ohms
Output sensitivity	Main-Out L/R, Mono-Out, Aux-Send 1/2, Monitor-Out: 600ohms, +4dBu (1,23V)
	Tape-Out (L/R) 600 ohms, -10dBu (245mV)
Signal-to-noise ratio	better than 97dB
Crosstalk	better than -90dB
Frequency range	20Hz - 20kHz +1 / -2dB
Channel equalizer	Highs: 12kHz shelving ±15dB
	Mids: 2,5kHz peaking ±12dB
	Mids for CH 1-3 semiparam. 100Hz-8kHz ±12dB
	Lows: 80Hz shelving ±15dB
Low Cut: 18dB/Okt. @ 75Hz	
Phantom power	+48V DC
Power supply	220V - 240V/AC, 50-60 Hz
Input power	approx. 2200 W
Dimensions (WxHxD) ;Weight	515 x 405 x 148 mm; 16,0 kg

## Model designations

- Power-Mixer**, 16 channels, 1200 W ..... **PMX-1216**  
**19" Rack-Mounting-Kit**, 9 RU ..... **RMK-16P**



**PA accessories**



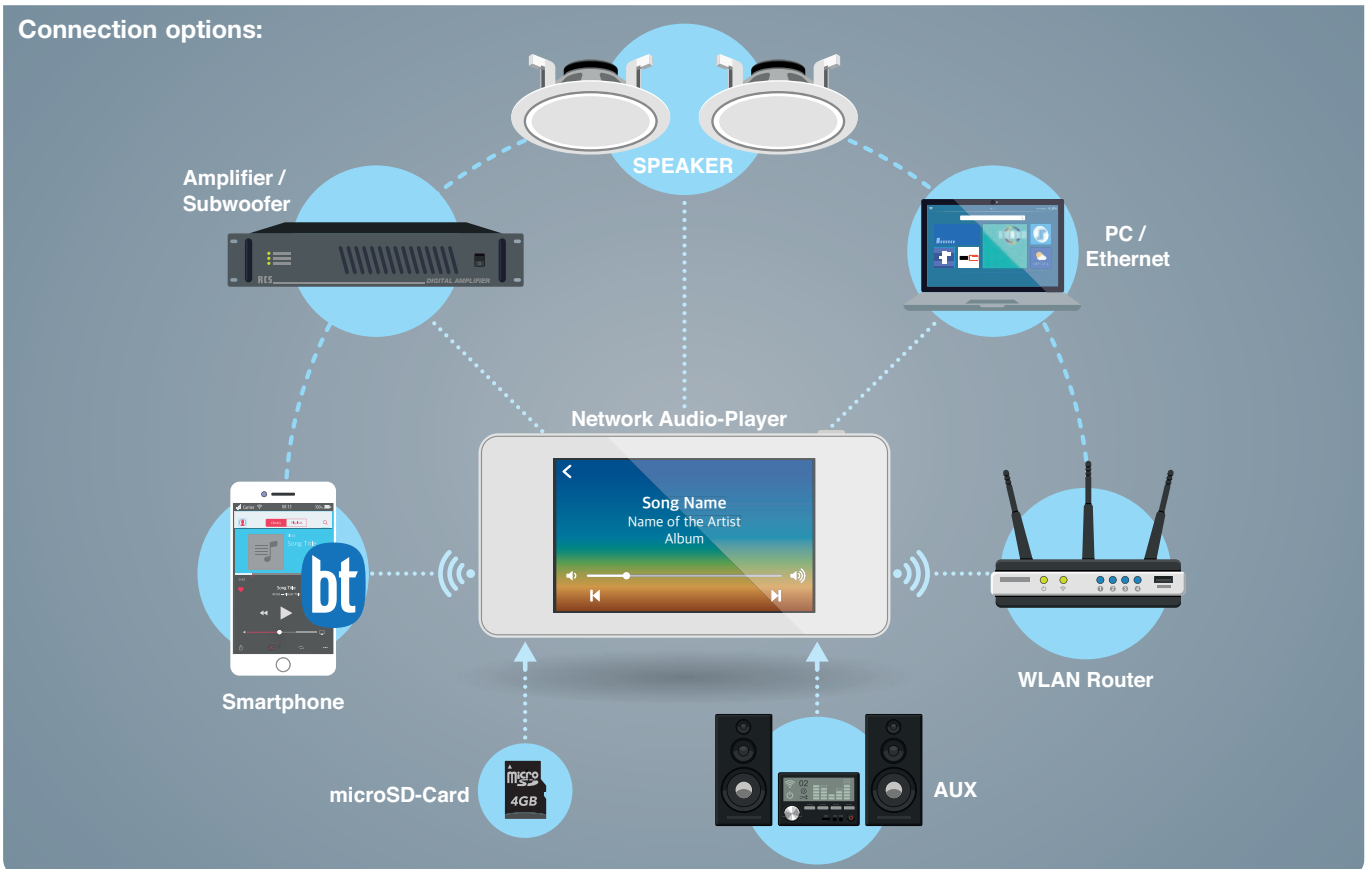
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Part 6



### Connection options:



40 A  
**40 W**  
 2x 20 W

FOR PASSIVE SPEAKERS  
 for **Xorva-S**  
**XSS-020 / XSS-040**



optional with:



## Description

The new NAP-240A network audio player is ideal for professional use in the field of music recording with its 5" TFT touchscreen, ideal for flush-mounting. Due to the discreet design, it is hardly noticeable.

It allows easy operation. The operating system on the device is the same as it is used on smartphones. Anyone who has ever had a smartphone in their hands will be able to tagging with the device.

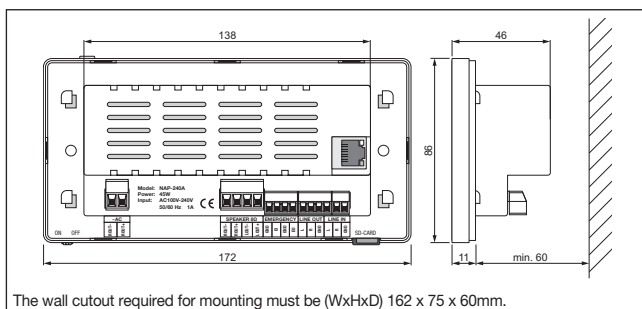
The player can be connected via BT or Wi-Fi and thus automatically receives the latest versions of the operating system.

Please consider the following features:

- The NAP-240A is equipped with a 5" TFT touch screen.
- Integrated 2x 20 watt Hi-Fi digital amplifier with DSPE effect.
- It has a BT function and is Wi-Fi and MP3-capable. It has a microSD card slot (up to 32 GB) and an AUX input. It has also a Network Player and Internet Radio.
- Inside the device there is a quad core CPU, 1 GB RAM and 8 GB ROM installed.
- On the start screen, e.g. the weather, time or date can be displayed.

- The network player supports Airplay and DLNA protocols, plays music from Wi-Fi and IOS® or Android® devices via AUX or BT.
- The NAP-240A also supports the use of a special attention app for IOS® or Android® devices.
- It is equipped with TCP / IP network connection and can be connected with intelligent control or central home music system.
- The player has the latest Android® control, which allows auto-update over the network. An Internet connection is required.
- A flush-mounted housing is included.

★



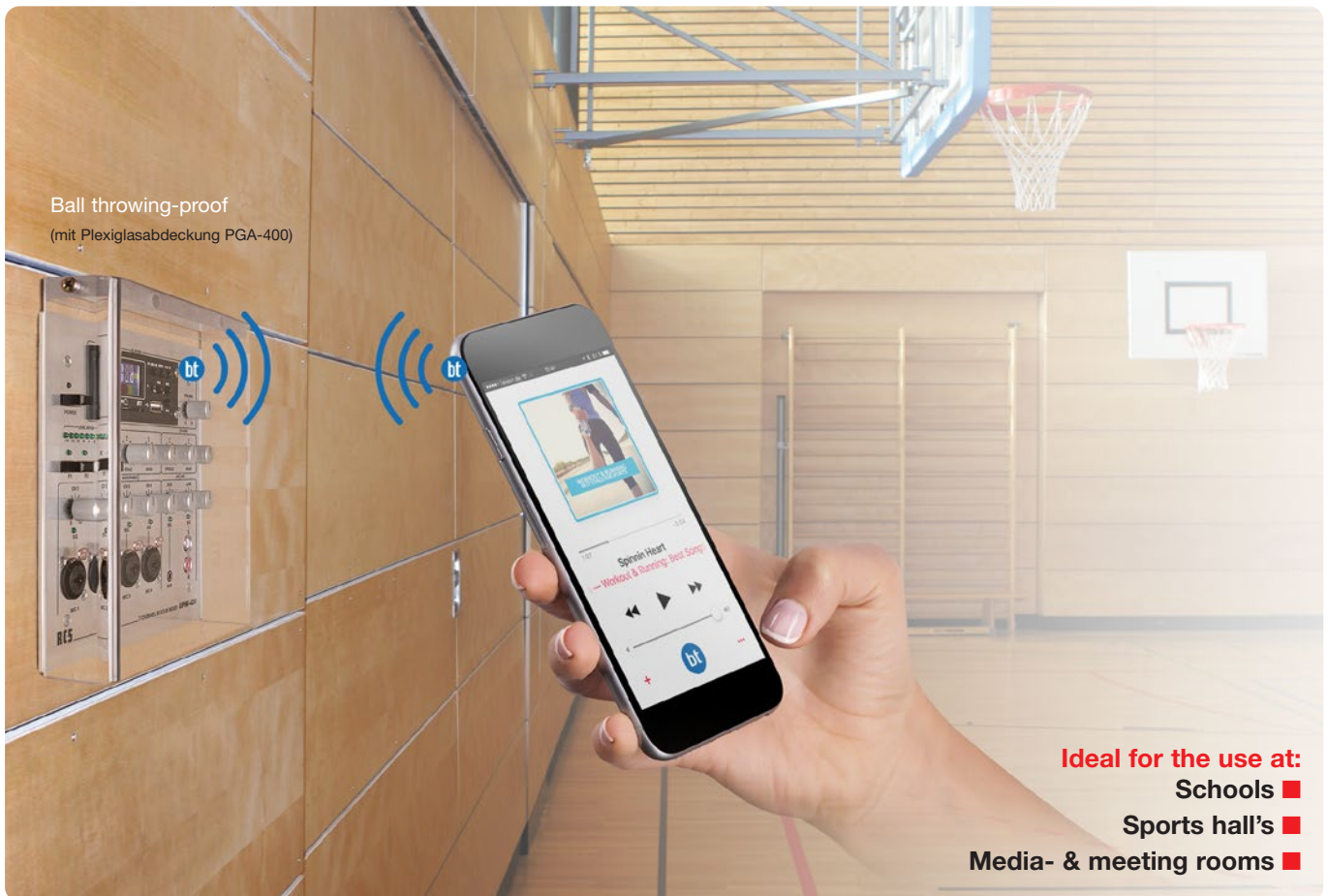
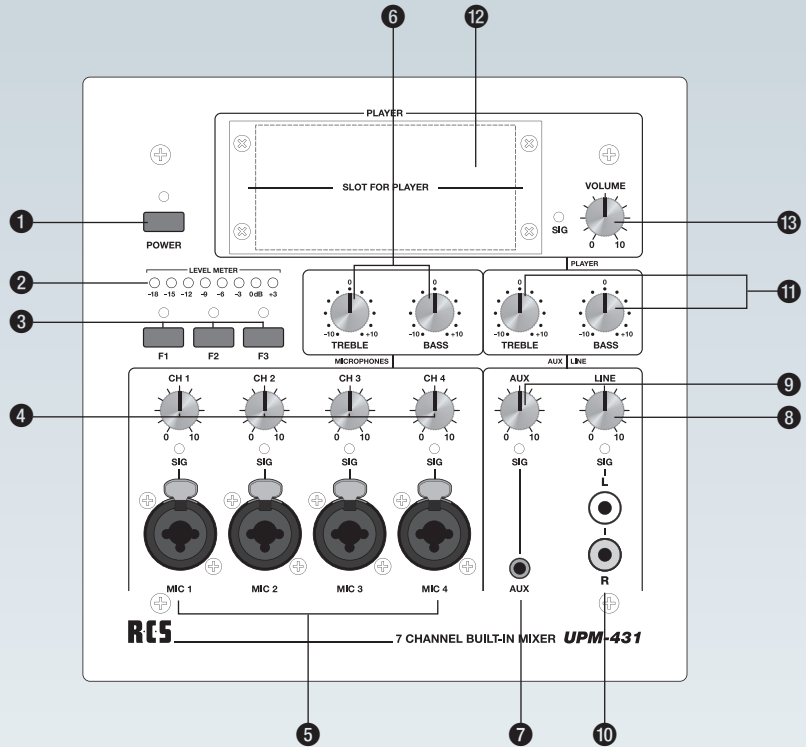
Technical data	NAP-240 A
Inputs	230 V AC, Ethernet RJ-45, Aux
Outputs	LINE Out (Stereo)
Output power	2x 20 W / 8 ohms
Audio sources	Micro-SD/AUX/BT/Wlan
AUX input impedance	10 kohms
BT range	approx. 10 m
Frequency range	20 - 20.000 Hz
Harmonic distortion @ 1 kHz (THD)	< 0,2 %
Signal to Noise Ratio (SNR)	> 80 dB
Power supply	180 - 240 V AC / 50 - 60 Hz
Dimensions (WxHxD)	172 x 86 x 46 mm
Colour, Weight	silver, 0,5 kg

## Model designation

**Smart Network-Audio-Player** ..... **NAP-240 A**  
 with 5" TFT-Touchscreen and integrated 2x 20 W Amplifier,  
 for Flush mounting, incl. 4GB mircoSD-Card

Front view

- ❶ ON / OFF switch with ready indication and floating contact
- ❷ LED level indicator of the sum signal
- ❸ function keys (F1 to F3, latching) with LED display and potential-free contacts
- ❹ input level controls for microphone inputs 1 to 4 with signal display LED
- ❺ XLR / combo microphone inputs 1 to 4
- ❻ treble and bass controls for microphone signals 1-4
- ❼ iPod® (AUX) input on 3.5mm jack
- ❽ input level controls for LINE
- ❾ input level controls for iPod® / AUX
- ❿ RCA LINE input
- ⓫ treble and bass controls for the LINE and iPod® / AUX signal
- ⓬ compartment for optional player module with BT / SD card / USB port
- ⓭ Volume control for the optional player module



# 7-CHANNEL OPERATOR CONTROL PANEL

# RCS



optional with:



## Description

The new 7-channel control panel, specially designed for professional applications, with the ability to feed up to 4 microphones, a stereo sound recording device and an AUX / iPod® input.

A high-quality sound is created by the separation of the signal paths. This feature creates the ability to control the mic and line inputs separately in the treble and bass. The signal display LED assigned to each channel is used to monitor the incoming signal.

The UPM-431A has a symmetrical output ex works. It is possible for the 4 microphone inputs via jumper to activate a phantom power. The modulation of the sum signal is displayed in 3 dB increments via an 8-digit VU meter.

Please consider the following features:

- 7 channels for 4x microphone, sound carrier, AUX and iPod®
- Separate signal ways for Mic and Line with their own height and depth control
- Per volume assigned volume knob with signal indicator LED
- Calibrated, 8-digit total VU meter
- Phantom power 18 V for all mic inputs
- Output levels adjustable from -9dBu to +3dBu
- Three function keys with status LED
- Power button with additional control function
- MIC 1 can jumper a voice-over function for the AUX / Line inputs
- Ball-proof in combination with Plexiglass cover PGA-400
- Audio on and off delay

### Optionales Zubehör

The BT player module has a USB port and an SD card compartment. For audio transmission via BT or USB connection from smartphone, tablet or PC. The SD card player can play audio files from a corresponding SD card (in the following formats: FLAC, WAV, APE, MP3, MP2, WMA, etc.).

**USB/SD-Card/BT-Player-Module** ..... **UB-100 A**  
incl. remote control

In connection with the Plexiglas-cover **PGA-400**, this operating control panel can be applied e.g. in schools or sports halls, as it has a impact resistance structure.

**Plexiglas Cover**, ball-throwing proof ..... **PGA-400**  
Dimensions (WxHxD): 168 x 168 x 55 mm

The UPM-421 can optionally be used as flush-mount **APG-400** as well as surface-mount housing **UPG-400**.

**Flush-Mount Housing** ..... **UPG-400**  
Dimensions (WxHxD): 159 x 159 x 76 mm

**Surface-Mount Housing** ..... **APG-400**  
Dimensions (WxHxD): 205 x 205 x 85 mm

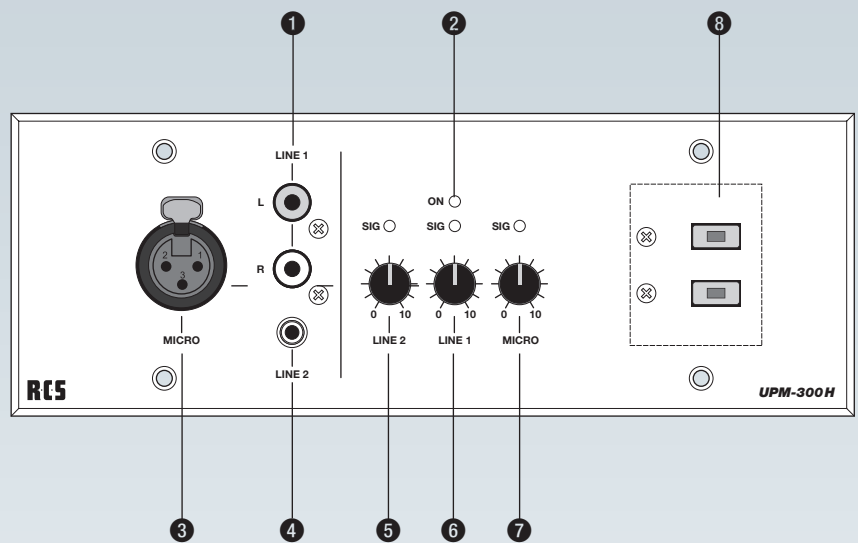
Technical data	UPM-431 A
Power supply	24V DC
Power supply	100 mA (Standby)
Output level (sym.)	-9dBu bis +3dBu
Output impedance (sym.)	100 ohms
Sensitivity MIC	-50dB
Sensitivity LINE	-16dB
Sensitivity AUX	-16dB
Tone control (H/T)	±12dB
Frequency range	50-20.000 Hz
Dimensions (WxHxD), Weight	182 x 182 x 55 mm; 195 g

## Model designation

**7-Channel Control Panel** ..... **UPM-431 A**

Front view

- 1 LINE 1 input on RCA, e.g. for stereo sound recording device
- 2 Ready for operation display
- 3 XLR microphone input on XLR jack
- 4 LINE 2 input on jack 3.5 mm, e.g. for iPod® / AUX or similar
- 5 input level control for LINE 2 with signal display LED
- 6 input level control for LINE 1 with signal display LED
- 7 input level control for the microphone input with signal display LED
- 8 Optional function key module with NO contact (only available for UPM-300H)



# 3-CHANNEL FLUSH MOUNTING MIXER

# RCS



2 buttons optional  
(UPM-300H only)

## Description

The new development 3-channel built in Mixer for 1x Mic/line and 2 line Stereo Inputs. One XLR connector for mic/line signal with or without Phantompower (18VDC), one stereo-cinch and one Stereo jack 3,5 mm (for example iPod®, etc.).

For each input you have a separate regulator. The individual channels assigned signal LED indicator is used to monitor the incoming signal. The UPM-300 is factory-fitted with a balanced output.

The mixer is suitable for installation in a space-saving 3-fold flush-mounting box or 3-fold wall mounted housing.

Please consider the following features:

- 3 Channels for 1x Microphone, LINE 1 (Cinch-Socket) and Line 2 (3,5 mm phone jack)
- Each Input has an assigned Volume-Controller with Signal-LED
- Phantom power 18 V for MIC-Input
- Output level is reversible from 0dB to +6dB
- Ball-throwing proof with optional Plexiglas Cover PGA-300
- Connection by easy to install, screwing free connection clamp
- Optionally available keypad with two buttons, with changer contact (UPM-002B). Can be used as push button or switch via the jumper.

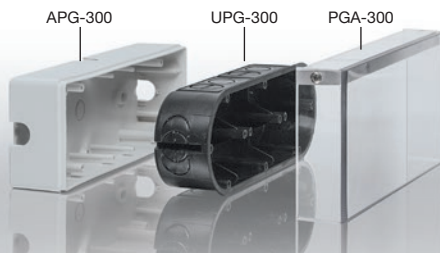
★

## Optional accessories

In connection with the Plexiglas-Cover **PGA-300**, this mixer can be applied e.g. in schools, sport halls, as it has an impact resistance structure (flush-mounting version only)

**Plexiglas-Cover**, ballwurfsicher ..... **PGA-300**

The UPM-300 H/V can be optionally used for both surface mount **APG-300** and flush mount **UPG-300**.



**Flush-Mount Housing, 3-fold** ..... **UPG-300**

Dimensions (WxHxD): 215 x 74 x 44 mm

**Surface-Mount Housing, 3-fold** ..... **APG-300**

Dimensions (WxHxD): 223 x 81 x 52 mm

Technical data	UPM-300 H / V
Power supply	24V DC (external)
Power supply	40 mA
Output level (sym.)	0dB or +6dB
Output impedance (sym.)	600 ohms
Sensitivity Micro	-63dB
Sensitivity LINE 1	-20dB
Sensitivity LINE 2	-20dB
Frequency range	30 - 20.000 Hz
Dimensions (WxHxD), Weight	223 x 80 x 37 mm; 187 g

## Model designation

**3-Channel Flush-Mount Mixer**, (horizontal) ..... **UPM-300 H**

**3-Channel Flush-Mount Mixer**, (vertical) ..... **UPM-300 V**

**Button Module 2-fold**, (for UPM-300H/V) ..... **UPM-002 S**



## Description

The new 4-channel control panel specially developed for small central units, with the ability to feed up to 2 microphones, 2 stereo signals and a USB connection for mp3-files.

Versatile system-extension for the Vario-Line intercom bus makes it easy to remotely control the output lines of the Vario-Line amplifiers.

The modulation of the sum signal is displayed via a 5-digit VU meter.

Please consider the following features:

- 4 channels for 2x microphone and 2x AUX; each channel is individually adjustable
- USB port for mp3 files; controllable with play / break and title jump - buttons
- Control of the output lines of the VLZ amplifier series. The control of the 6 lines is possible individually or with All-Call button
- Simultaneous operation on intercom bus possible via CAT cable
- Call stations can take precedence over VPM- 6000 U via Priority / Slave switch
- Voltage supply also possible externally via 24V input
- Volume control assigned to each input
- 5-digit total VU meter

- Phantom power 18V can be activated with jumper for all MIC inputs
- Input impedance of the MIC / LINE inputs switchable
- Key switch for switching the device on / off



Technical data	VPM-6000
Power supply	via VARIO-LINE amplifier or 24V DC
Power consumption	3 W
Output level	+8dB
Sensitivity MIC	-50dB (2,45mV), 2kohms, bal.
Sensitivity LINE	0dB (775mV), 2kohms, bal.
Sensitivity AUX	-10dB(245mV), 15kohms, unbal.
Frequency range	20 - 20.000 Hz
Signal to Noise Ratio	MIC: better than 50dB; LINE: better than 80dB
Harmonic distortion (THD) bei 1kHz	better than 0,3%
Dimensions (WxHxD)	220 x 158,5 x 61 mm
Hole cut-out/installation depth (WxHxD)	200 x 125 x 59 mm
Weight	1,2 kg

## Model designations

<b>4-Channel Operator Control Panel</b> , (for VLZ-Series), with 4 inputs and USB-Interface .....	<b>VPM-6000 U</b>
<b>Digital Receiver Module</b> , for VPM-6000 U .....	<b>RR-60</b>
<b>Flush-Mounting Housing</b> , for VPM-6000 U, Dimensions (WxHxD): 220 x 195 x 70 mm .....	<b>UPG-600</b>



## Description

The RVC-201A remote volume control is a 2-channel, voltage-regulation volume control for gain control. It is designed for use in professional PA or public address systems. The signal level for each channel can be remotely controlled separately by DC voltage.

The preamplifier can be used to connect LINE-level stereo and mono devices (such as CD players, mixers, tape recorders, etc.). It is designed specifically for DIN rail mounting, but it can also be mounted freely.

The distance of the potentiometers to this module can be up to 100 meters. If a stereo signal is used, then a jumper can be set internally and the Stereo signal can be controlled with a potentiometer, e.g. with the RVC-001 A or the RVC-002 A.

Please consider the following features:

- Before switching on, the control voltages should be set to 4 V (0 ohms) to avoid strong switch-on noises.
- The device complies with all required directives of the EU and is therefore marked with „CE“.

- The RVC-201A is suitable for indoor use. Protect it against dripping and splashing water, high humidity and heat (admissible ambient temperature range 0°C to +40°C)
- The two potentiometers RVC-001 A or RVC-002 A are required for use.

★



The controllers RVC-001 A and RVC-002 A are supplied in the switch program.

Technical data	RVC-201 A
Inputs	2x LINE, mono: 1 V / 30 kOhm, symmetrical 2x control input: 0 - 4 V / 10 kOhm, linear
Outputs	2x LINE mono: 1 V/ 600 ohms, symmetrical
Frequency range	20 - 20.000 Hz
Harmonic distortion	0,1 %
Signal to noise ratio	70 dB, unweighted
Power supply	24 V DC (external)
Operating temperature	0 - 40 °C
Dimensions (WxHxD)	85 x 103 x 30 mm
Weight	0,5 kg

## Model designations

**Remote-Volume-Controller** ..... **RVC-201 A**  
2-Channel, voltage regulated

**Volume Control, 1-fold** ..... **RVC-001 A**  
Controller for RVC-201 A

**Volume Control, 2-fold** ..... **RVC-002 A**  
Controller for RVC-201 A



### Alarming via cell phone

- Integration into VAS
- Authorized up to 256 telephone numbers
- No landline connection required
- Easy installation and setup

### Description

The amok alarm system AAS-100A is activated by an incoming call from an authorized cell phone, for example owned by a teacher at a school. In a standard setup the incoming call triggers a pre-recorded, automatic announcement via the paging system. Additional functions, for example an automatic call to an emergency response centre, can be implemented as well.

Please consider the following features:

- **Operation:** AAS-100A checks the phone number of an incoming call and triggers an alarm if this number is authorized
- **Configuration:** AAS-100A is set up using the bundled PC software (requires Microsoft Windows OS and a USB connection to the host PC)

### The emergency call in three steps

- 1st The teacher chooses the emergency number stored in his cell phone.
- 2nd The AAS shall examine the caller's number and at authorization it switch a contact.
- 3rd The switched contact activated, for example, a speaker system that separates an automatic announcement.



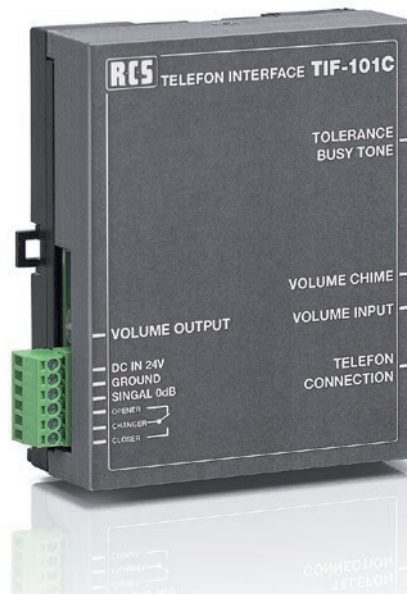
- **Protection against mains power failure:** if the 230 V AC mains power fails the facility manager is automatically informed with an SMS to his cell phone; AAS-100A remains functional for two days after mains power is lost
- **Upgrades:** by using multiple AAS-100A different types of alarms can be distinguished between; for this mode of operation different phone numbers are saved in the authorized cell phones, with each number assigned to one type of alarm (for example fire alarm, amok alarm and silent alarm)
- **Outbound alarm:** external institutions (for example police or fire department) can be called automatically when an alarm is triggered by an authorized cell phone

★

Technical data	AAS-200A
Housing	for wallmounting
Programming	Phone call, SMS, PC
Alarm inputs	4 (conventional)
Relay outputs	4 (conventional)
Operating temperature	±0 up to +40 °C
Protection class	IP20 (compliant to DIN EN 60529)
Power supply	12V DC/ 1 A
Telephone connection	GSM (CTR 31, CTR 32)
Dimensions (WxHxD)	96x63x28 mm
Weight	approx.200 g

### Model designation

Amok Alarm System, GSM/GPS ..... **AAS-200A**



## Description

The telephone interface **TIF-404 C** can be operated in two operating modes. In the telephone interface mode for announcements in 1 to 4 different areas and collective announcements, as well as in the control mode for the control of up to 4 contacts, like e.g. for external signal storage. There are either 4 permanent contacts or 4 pulse contacts available, which can be controlled by dealing via the telephone keypad.

The telephone interface **TIF-101 C** has been developed for a general public announcement. The sensitivity of the busy tone detection can be adjusted via jumpers. For switching external PA components, a potential-free contact is available, which is switched when the call is accepted.

- + to speak into the PA system
- + to trigger switching operations
- + to trigger amok alarm
- + as upgrade to existing ELA system

Both devices can be operated on any analogue extension port. The interface can be adapted to any telephone network by means of adjustable occupancy tone detection. The AF signal outputs are provided with level control. All switching outputs have potential-free changeover contacts.

Technical data	TIF-404 C	TIF-101 C
Power supply	24V	
Current consumption	70mA	65 mA
Contact type	4x Changing switch	1x Changing switch
Contact rating	1A/60 DC	1 A / 60 DC
Output signal	0dB symmetrical (±6dB)	
Betriebstemperatur	±0 bis +40 °C	
Telephone connection	Analogue	
Phone tones	DTMF	
Serial output	9.600 BAUD, TTL Pegel	
Dimensions (WxHxD)	120 x 35 x 105 mm	85 x 103 x 30 mm

The housing can be mounted on conventional DIN rail and installed by means of Phoenix terminal. Due to its small dimensions, this module is also the ideal extension for any existing PA system.

Please consider the following features:

### TIF-404 C

- **Telephone Interface Mode:** In this mode, K1-K4 can be controlled in up to 4 zones via floating contacts. Another potential-free contact signals the start of the announcement.
- **State RAM mode:** In this mode, an external signal memory can be controlled. Depending on the input, a permanent contact or a pulse contact (1 second) is activated.
- **Busy tone mode:** In this mode, the frequency and level of the busy tone can be adjusted.
- **Serial output:** All contact changes are output parallel to the switching contact as a serial signal. The output level corresponds to the TTL signal.
- Ideal for combination with the digital language storage module DMM-618 B, with VARES series systems.
- Furthermore, this module is also used in the small control panels of the „VARIO-LINE“ series.

### TIF-101 C

- Level control for input and output volume
- Telephone connection via RJ-11 plug
- Occupied sound sensitivity adjustable via jumper

★

### Model designations

**Telefon Interface**, analogue ..... **TIF-101 C**  
with 1 changeover contact and all call

**Telefon Interface**, analogue ..... **TIF-404 C**  
with 4 changeover contacts and all call



### Description

The **manual call points HMA-001 G/Y/O** (green, yellow, or orange) are used to control amok alarming systems. With the label “Amok alarm” (replaceable), they point directly to the warning system.

The **manual call points HMA-001 B** (blue) is used to control house alarming systems. With the label “House alarm” (replaceable), it points directly to the warning system.

The **manual call point HMA-001 W** (white) has been specially designed for use in NGRS systems.

The **manual call points** are housed in a sturdy aluminium housing, which proves to be advantageous in comparison with plastic housings thanks to its environmental resistance even with years of use. It is unbreakable, dimensionally stable and does not discolour in sunlight.

Please consider the following features:

- The swivelling door with an opening angle of 180 ° has a removable glass panel.
- If the detector is released, the integrated locking lug prevents the closing of the door.
- All MCP are ideally suited for combination with the ASS-100A, DMM-618A and with any system of the VARES-series.

★

Technical data	HMH-001 B	HMA-001 G	HMA-001 Y	HMA-001 O	HMA-001 W
Housing	Aluminum die cast				
Contacts	1x changer 48 VAC/DC 1 A				
Operating temperature	-20 to +60 °C				
Protection class	IP43 (compliant to DIN EN 60 529)				
Weight	400 g				
Labeling	House alarming	Amok alarming	Amok alarming	Amok alarming	Emergency
Dimensions (WxHxD)	125 x 125 x 34 mm				
Color	blue	green	yellow	orange	white

### Model designations

MCP »Amok alarm«, green ..... **HMA-001 G**  
 MCP »Amok alarm«, yellow ..... **HMA-001 Y**  
 MCP »Amok alarm«, orange ..... **HMA-001 O**  
 MCP »Emergency«, white ..... **HMA-001 W**  
 according to the standard VDE 0827 for Emergency and Danger Reaction Systems (NGRS)

MCP »House alarming«, blue ..... **HMH-001 B**  
 \_\_\_\_\_ Optional accessories: \_\_\_\_\_  
 Spare glass insert ..... **HMG-001**  
 Spare key, (metal) ..... **HMS-001**

# DIGITAL AMPLIFIER MODULE (FOR DIN RAIL)



## Description

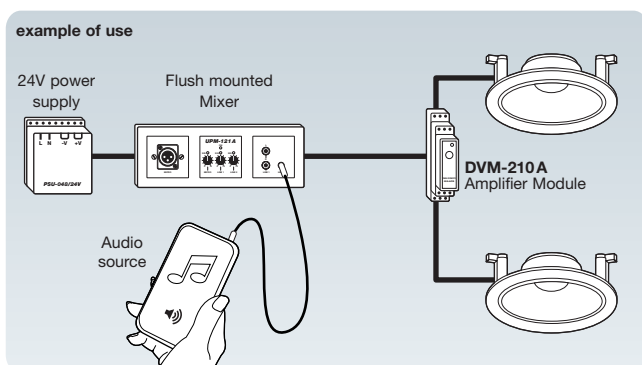
The DVM-210A is a Class-D technology digital stereo amplifier module with an output power of 20W per channel.

The four-stage rotary switch behind the transparent front flap allows the setting of four different gains to adapt to existing audio input level.

The multi-color LED shows the operational readiness and stays green. In case of overload, the LED lights up red in the signal beat.

Please consider the following features:

- Easy installation and installation costs.
- Placement in subdivisions possible, the module width is only 1 HP (horizontal pitch).
- Low heat generation by digital circuitry.



- Protective circuit against short circuit, reverse polarity and overheating.

★

Technical data	DVM-210A
Output power at 24V	2x 20 W on 4 ohms / 2x 10 W on 8 ohms
Frequency range -3dB	40 – 30.000 Hz
Audio inputs	unbalanced
Protection circuits	thermal, short circuit, reverse polarity
Rotary switch (4 gain stages)	20dB, 26dB, 32dB, 36dB
Input level	0dB, -6dB, -12dB, -16dB
input resistance	60kohms, 30kohms, 15kohms, 10kohms
Output impedance	4 ohms
Operating voltage	10-28 V DC
Current consumption at 24V/max.	45mA/2A
Connections	screw terminals up to 2,5 mm <sup>2</sup>
Weight	65 g
Dimensions (WxHxD)/horiz. pitch	89,7 x 62,2 x 17,8 mm; 1 HP

## Model designation

**Digital Audio Amplifier Module** ..... **DVM-210A**  
2x20W, suitable for DIN rail mounting, 1 HP





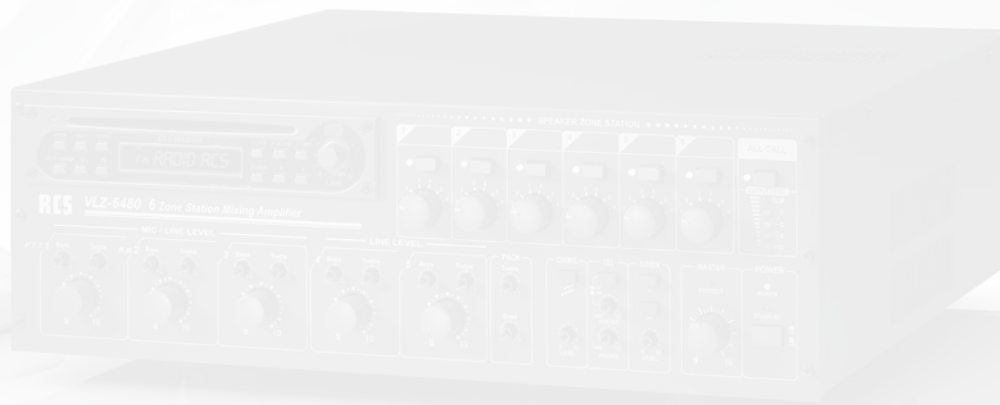
**Desktop amplifiers, PA centers  
and sound sources**



**7**

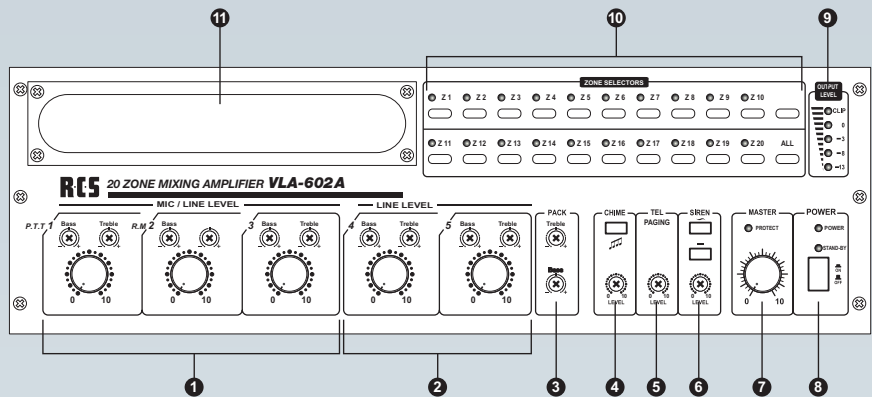
**Part 7**

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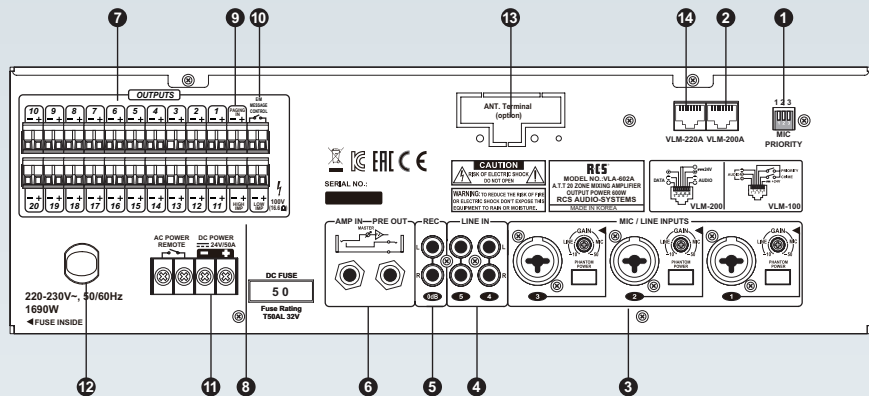
Front view

- 1 Controller for MIC / LINE-Inputs 1 – 3
- 2 Controller for LINE-Inputs 4 + 5
- 3 Bass/Treble control for embedded moduls
- 4 Chime switch and volume control for chime
- 5 Volume controls for PAGING input
- 6 Siren trigger buttons (up and down or continuous tone); Volume control for siren
- 7 Sum controller „Master“
- 8 On / off switch
- 9 LED display for output signal
- 10 20 zones selection, all-call switch and control unit
- 11 Slot for optional sound source modules



Rear view

- 1 Switch for MIC priority
- 2 Connection for all-call microphone station (VLM-200A) to RJ45
- 3 MIC / LINE Inputs 1 – 3
- 4 LINE Inputs 4 + 5
- 5 REC Output, unbal. 0dB
- 6 AMP-IN and PRE-OUT, Jack 6.3mm, unbal. 0dB
- 7 Speaker outputs 20 zones; 100V
- 8 100 V output and 4 ohm output, unswitched
- 9 PAGING input (priority entry)
- 10 Switching input for text announcing of DMT-10 and „all-call“
- 11 Connection for DC power supply DC 24V and Power Remote
- 12 AC power connection cable
- 13 Slot for antenna connection or switching inputs for the text module
- 14 Connection for Microphone Station (VLM-220A) to RJ45



## VLM-200A | for all-call

Microphone station (condenser) for announcements in zones selected on the amplifier. With activated dip-switches (rear panel) it is possible to add a all call with priority and pre-chime. Connection via RJ45 socket. With busy indicator.



Microphone Station ..... VLM-200A  
for VLA-602A

Technical data	VLA-602A
Output power	900/600 W (Program/RMS)
Frequency resp., noise level	55 Hz – 16.000 Hz (better than -3 dB), MIC better than 70 dB, LINE better than 80 dB
THD at 1 kHz	better than 1 %
Inputs MIC – AUX/LINE	All Mic/Line-Inputs are electronically balanced. Input 1+2 with priority. All Mic/Line-Inputs feature combo-females (Jack 6.3 mm, XLR). Mic: -50dB (2,45 mV), Line: -10dB (245 mV) PAGING: -10dBu(245mV) 5kOhm, symm.
Outputs, speakers	100V, low impedance 4 ohms
Additional input or output	REC-OUT: 0dBu (775 mV)
Chime and Siren	2- or 4-tone chime (switchable); siren with up-down or continuous tone (adjustable on the frontside)
Power Supply AC/DC	AC 230 V (50/60 Hz), DC 24V
Dimensions (WxHxD) / Weight	483 x 133 x 379 mm; 21 kg



VLM-220A

**+ 20 SPEAKER LINES**  
**+ UP TO 32 MICROPHONES**

Supplied with 19" mounting brackets.

### Description

This amplifier and intercom system „VARIO-LINE“ makes it possible to switch up to **20 speaker zones** as well as „all-call“ from the control panel.

The amplifier can be used with any microphone, but has been optimized for the use with the „VARIO-LINE“ microphone stations VLM-200A, VLM-220A (digital remote control of the speaker zones and the digital announcement module DMT-10).

Please consider the following features:

- The inputs 1 - 3 are to be switched to MIC or LINE and have priority over the inputs 4 + 5. The respective volume as well as height and depth are regulated separately.
- All MIC inputs have gain control and switchable phantom power. The priority switches define the priority of the inputs.
- The MIC inputs are balanced on combo sockets. MIC-1 is additional on RJ-45 socket. The LINE inputs are via RCA sockets.
- For cascading with other amplifiers, the AMP-IN and PRE-OUT jacks can be used.
- The amplifier operates on mains power (230 V) or 24 V DC (emergency power supply).
- Integrated is an electronic 4-tone chime (internally with jumper to 2-tone chime convertible), an electronic siren (swelling, continuous tone) and a PAGING input (LINE-IN with priority)
- Other external connections are e.g. the remote activation “POWER REMOTE” or the alarm contact “E/M Message Control” (in conjunction with text module).
- In addition to the 100 V outputs, the amplifier has a low-impedance 4 Ohm output.

### Special functions

As an optionally available special feature, we can provide you with an additional gong module that gives you 5 different types of gongs incl. DIN Siren provides. (Article No. : VL-Service 02)

- This mixer amplifier offers the option of inserting a sound carrier module into the empty space provided for this purpose.

#### FM/AM Tuner module

18x FM + 6x AM memory stations

**TP-10USB**



#### CD/MP3-Player module

Repeat, Random, etc.

**CDP-10USB**



#### CD/MP3-Tuner module

RDS-Tuner and MP3-/CD-Player

**CDR-10USB**



#### Digital text module

with timer functions, microSD-Card

**DMT-10**



#### BT-Player module

USB-Port/SD-Card, Remote

**BM-10U**



For a detailed description of the modules see pages 142 and 143.

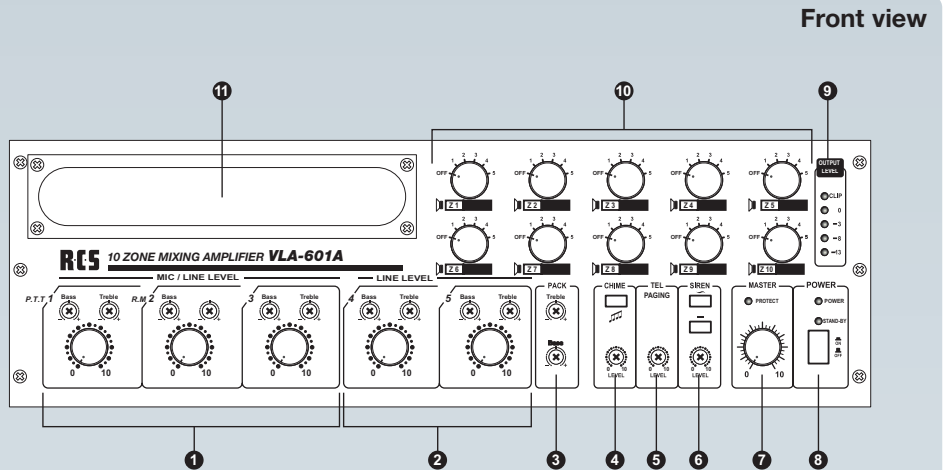
### Model designations

**20-ZONES „DIGITAL-LINE“, 600W (3 RU) . . . . . VLA-602A**

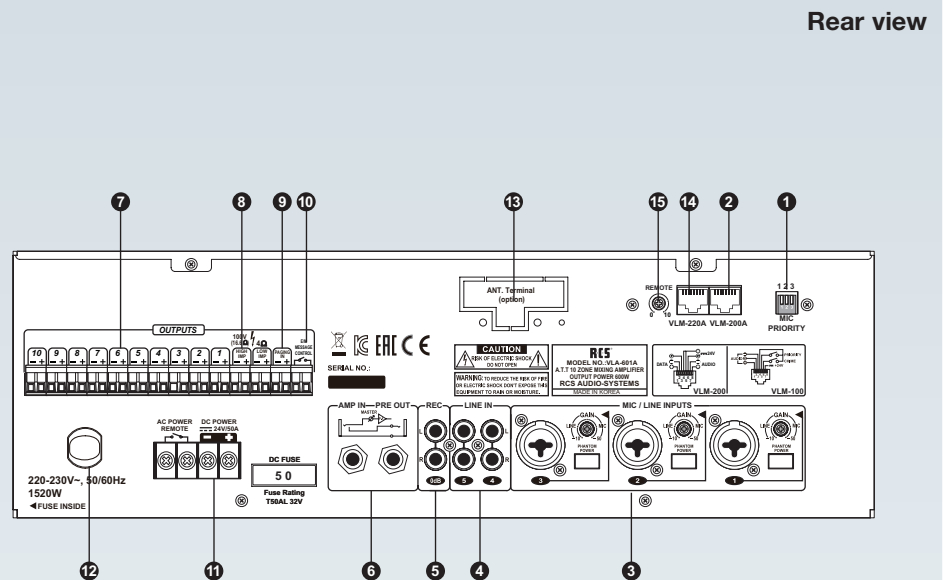
**Microphone Station, for all-call . . . . . VLM-200A**

**Microphone Station, digital for 20 Zones . . . . . VLM-220A**

- 1 Controller for MIC / LINE-Inputs 1 – 3
- 2 Controller for LINE-Inputs 4 + 5
- 3 Bass/Treble control for embedded moduls
- 4 Chime switch and volume control for chime
- 5 Volume controls for PAGING input
- 6 Siren trigger buttons (up and down or continuous tone); Volume control for siren
- 7 Sum controller „Master“
- 8 On / off switch
- 9 LED display for output signal
- 10 10 zones selection, all-call switch and control unit
- 11 Slot for optional sound source modules



- 1 Switch for MIC priority
- 2 Connection for all-call microphone station (VLM-200A) to RJ45
- 3 MIC / LINE Inputs 1 – 3
- 4 LINE Inputs 4 + 5
- 5 REC Output, unbal. 0dB
- 6 AMP-IN and PRE-OUT, Jack 6.3mm, unbal. 0dB
- 7 Speaker outputs 10 zones; switchable for 100V, 70V, 50V, 25V, 12.5V
- 8 100 V output and 4 ohm output, unswitched
- 9 PAGING-IN (priority entry)
- 10 Switching input for text announcing of DMT-10 and all-call
- 11 Connection for DC power supply DC 24V and Power Remote
- 12 AC power connection cable
- 13 Slot for antenna connection or switching inputs for the text module
- 14 Connection for Microphone Station (VLM-210A) to RJ45
- 15 Volume controls REMOTE for announcement of VLM-210A



## VLM-200A | for all-call

Microphone station (condenser) for announcements in zones selected on the amplifier. With activated dip-switches (rear panel) it is possible to add a all call with priority and pre-chime. Connection via RJ45 socket. With busy indicator.



**Microphone Station** ..... **VLM-200A**  
for VLA-601A

Technical data	VLA-601 A
Output power	900/600 W (Program/RMS)
Frequency resp., noise level	55 Hz – 16.000 Hz (better than -3 dB), MIC better than 70 dB, LINE better than 80 dB
THD at 1 kHz	better than 1 %
Inputs MIC – AUX/LINE	All Mic/Line-Inputs are electronically balanced. Input 1+2 with priority. All Mic/Line-Inputs feature combo-females (Jack 6.3 mm, XLR). Mic: -50dB (2,45 mV), Line: -10dB (245 mV) PAGING: -10dBu(245mV) 5kOhm, symm.
Outputs, speakers	100V, low impedance 4 ohms
Additional input or output	REC-OUT: 0dBu (775 mV) 3 kohms unsw.
Chime and Siren	2- or 4-tone chime (switchable); siren with up-down or continuous tone (adjustable on the frontside)
Power Supply AC/DC	AC 230 V (50/60 Hz), DC 24V
Dimensions (WxHxD); Weight	483x133x379 mm; 21 kg



VLM-210A

**+ 10 SPEAKER LINES**  
**+ UP TO 32 TALKS**  
**+ ADDITIONAL POWER AMPLIFIER FOR**

Supplied with 19" mounting brackets.

### Description

The amplifier and intercom system „VARIO-LINE“ makes it possible to switch up to **10 speaker lines** from the control panel.

Each microphone can be connected to the amplifier, but in particular the „VARIO-LINE“ stations VLM-200A („all-call“) and VLM-210A (digital remote control of the speaker zones and the digital text module DMT-10).

Please consider the following features:

- The inputs 1 - 3 are to be switched to MIC or LINE and have priority over the inputs 4 + 5. The respective volume as well as height and depth are regulated separately.
- All MIC inputs are equipped with gain control and switchable phantom power. The priority switches determine the priority among each other.
- The MIC inputs are symm. on combo sockets, MIC 1 additionally with RJ-45 socket. The LINE inputs are equipped with RCA jacks
- For cascading with other amplifiers, the AMP-IN and PRE-OUT jacks can be used.
- The amplifier is operated with mains current (230V) or 24V DC voltage.
- Other external connections are e.g. the remote activation „POWER REMOTE“ or the alarm contact „E / M Message Control“ (in conjunction with text module).
- The amplifier has a low impedance 4 ohm output in addition to the 100V outputs.
- As a special feature, this amplifier has an additional output stage for selective announcements in one or max. 2 zones. When these zones are selected via the VLM-210A intercom station, simultaneous announcement in these zones is possible, while the background music in the remaining zones is not interrupted.

### Special functions

As an optionally available special feature, we can provide you with an additional gong module that gives you 5 different types of gongs incl. DIN Siren provides. (Article No. : VL-Service 02)

- Integrated is an electronic 4-tone gong (internally with jumper to 2-tone gong convertible), an electronic siren (swelling, continuous tone) and a PAGING input (LINE-IN with priority)).
- This mixer amplifier offers the option of inserting a sound carrier module into the empty space provided for this purpose. The following modules are available:

**FM/AM Tuner module**  
 18x FM + 6x AM memory stations  
**TP-10USB**

**CD/MP3-Player module**  
 Repeat, Random, etc.  
**CDP-10USB**

**CD/MP3-Tuner module**  
 RDS-Tuner and MP3-/CD-Player  
**CDR-10USB**

**Digital text module**  
 with timer functions, microSD-Card  
**DMT-10**

**BT-Player module**  
 USB-Port/SD-Card, Remote  
**BM-10U**

For a detailed description of the modules see pages 142 and 143.

### Model designation

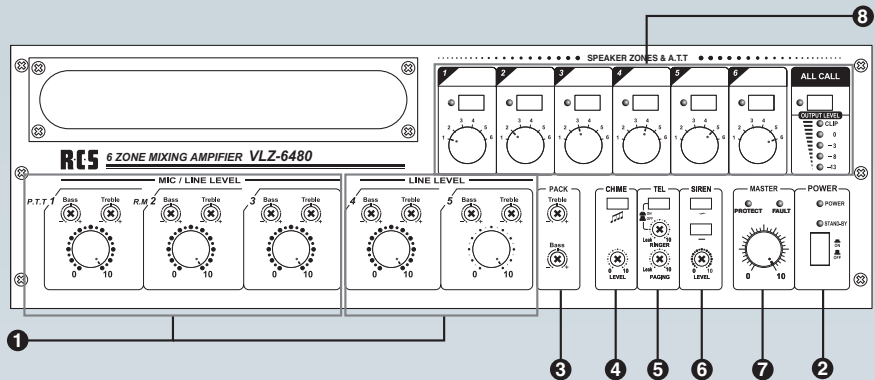
**10-ZONES „VARIO-LINE“, 600 W, 3 RU . . . . . VLA-601 A**

**Microphone Station, for all-call . . . . . VLM-200 A**

**Microphone Station, digital for 10 Zones . . . . . VLM-210 A**

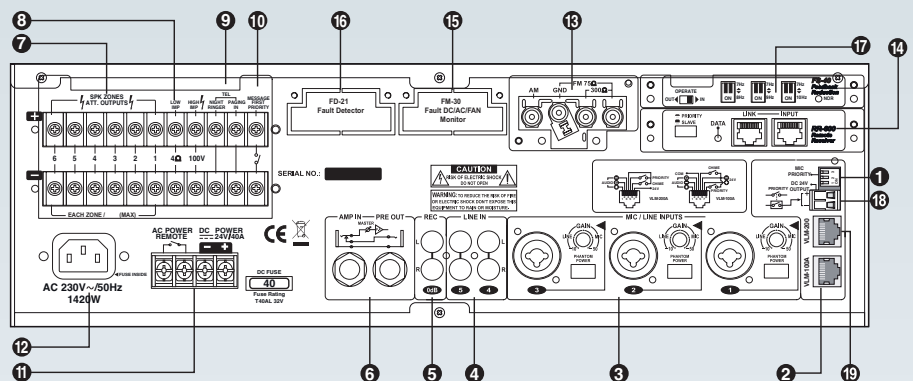
Front view

- 1 Inputs for MIC / LINE control
- 2 Power switch
- 3 Bass/Treble control for embedded moduls
- 4 Chime switch and volume control
- 5 NIGHT-RINGER switch, volume control for RINGER and Paging-input
- 6 Siren switch, up-down tone / constant tone and volume control for siren
- 7 Master volume control
- 8 6 zones, all-call switch and control unit



Rear view

- 1 MIC priority switch
- 2 MIC-1 with chime release for VLM-100A (RJ-45)
- 3 MIC / LINE Inputs 1 – 3
- 4 LINE Inputs 4 + 5
- 5 REC output, unbalanced 0dB
- 6 AMP-IN and PRE-OUT, Jack 6,3 mm, unbalanced.
- 7 100V and 70 V speaker outputs, 6 separately controlled circuits
- 8 Low impedance outputs, 4 ohms
- 9 NIGHT-RINGER and PAGING-IN
- 10 Terminal for priority switch of the Digital text module DMT-10
- 11 Terminal for 24V DC power supply and Power Remote
- 12 IEC power inlet (cold condition)
- 13 Antenna terminal (only with installed tuner module)
- 14 Terminal for remote microphone desks VLM-106/206
- 15 Shaft for optional Error Monitoring Module FM-30
- 16 Shaft for optional pilot tone Module FD-21
- 17 Shaft for optional Frequency Shift-Module FS-40
- 18 DC 24V output for obligatory call (for VLM-100A, VLM-200A)
- 19 Connection for VLM-200A (RJ-45)



Technical data	VLZ-6120A	VLZ-6240A	VLZ-6480A	VLZ-6600A
Output power	180/120 W (Program/RMS)	360/240 W (Program/RMS)	720/480 W RMS (Program/RMS)	900/600 W RMS (Program/RMS)
Frequency resp., noise level	55 Hz – 20.000 Hz (better than -3 dB), MIC better than 70 dB, LINE better than 80 dB			
THD at 1 kHz	better than 1 % at 1kHz			
Inputs MIC – AUX/LINE	All Mic/Line-Inputs are electronically balanced. Input 1+2 with priority. All Mic/Line-Inputs feature combo-females (Jack 6.3 mm, XLR). Mic: -50dB (2,45 mV), Line: -10dB (245 mV)			
Outputs, speakers	100V, 70 V, low impedance 4 ohms			
Additional input or output	AMP-IN: +4dB (1,23 V), PRE-OUT: 0dBu (775 mV)			
Chime and Siren	2- or 4-tone chime (switchable); siren with up-down or continuous tone (adjustable on the frontside)			
Power Supply AC/DC	AC 230 V (50/60 Hz), DC 24V			
Dimensions (WxHxD); Weight	483x133x356 mm; 13 kg	483x133x356 mm; 14 kg	483x133x356 mm; 20 kg	483x133x356 mm; 22 kg

4 power classes  
120-240-480-600 W



VLM -206

Supplied with 19" mounting brackets.

- + 6 SPEAKER LINES
- + MONITORING OF THE BASIC FUNCTIONS
- + UP TO 600W (RMS) POWER

## Description

The „VARIO-LINE“ amplifier and microphone system permits the switching of up to **6 speaker zones** and of the all-call function as well as the setting of the desired volume for each zone from the central unit. The amplifier can be used with any microphone, but has been optimized for the use with the „VARIO-LINE“ microphone stations VLM-100A, VLM-106 (digital remote control of the speaker zones) and VLM-206 (digital remote control of the speaker zones and the DMT-10 digital announcement module).

- Inputs 1 - 3 can be switched to MIC or LINE. The respective volume as well as treble and bass are controlled separately and have always priority over LINE-IN.
- All MIC inputs have gain control and switchable phantom power. The priority switches define the priority of the inputs.
- The MIC inputs are balanced combo sockets. MIC-1 is additional on RJ-45 socket for VLM-100A. The LINE inputs are RCA sockets.
- Optionally available are the Module FD-21 monitor the amplifier. Further available the Module FM-30 with fan/fuse fault relay contacts and the FS-40 Frequency-Shift-Module.
- The AMP-IN and PRE-OUT sockets allow cascading of further amplifiers. The 5 output circuits may also be used for this purpose after they have been modified (VLZ-SERVICE 01).
- The amplifier operates on mains power (230 V) or 24 V DC (emergency power supply).
- The unit is also equipped with an electronic 2- or 4-tone chime (switchable), an electronic siren (high-low, switchable to alarm sound) and a telephone paging input (Line-in with priority); all these signals can be controlled separately on the front panel.

- A special feature of all models is the option for integrating a sound source module. An empty compartment is provided for the installation of an additional module. The following modules are available:

**FM/AM Tuner module**  
18x FM + 6x AM memory stations  
**TP-10USB**

**CD/MP3-Player module**  
Repeat, Random, etc.  
**CDP-10USB**

**CD/MP3-Tuner module**  
RDS-Tuner and MP3-/CD-Player  
**CDR-10USB**

**Digital text module**  
with timer functions, microSD-Card  
**DMT-10**

**BT-Player module**  
USB-Port/SD-Card, Remote  
**BM-10U**

For a detailed description of the modules see pages 142 and 143.

## Model designations

- 6-ZONES „VARIO-LINE“, 120 W (3 RU) ..... VLZ-6120 A**
- 6-ZONES „VARIO-LINE“, 240 W (3 RU) ..... VLZ-6240 A**
- 6-ZONES „VARIO-LINE“, 480 W (3 RU) ..... VLZ-6480 A**
- 6-ZONES „VARIO-LINE“, 600 W (3 RU) ..... VLZ-6600 A**

### VLM-100 A | for all-call

Microphone desk (condenser) with pre-announcement chime, priority switching via 7-pin DIN and RJ-45 connection.



Microphone desk ..... **VLM-100A**

### VLM-106 | for 6 zones

Digital microphone desk to select and control 6 speaker zones. Pre-announcement chime and all-call.



Microphone desk ..... **VLM-106**  
 Microphone desk ..... **VLM-106WO**  
 as VLM-106 but without interface RR-60  
 Function extension module ..... **VLE-004**  
 to remote special functions (via separate line)

### VLM-206 | for 6 zones & text module

Digital microphone desk to select and control 6 separately speaker zones, further for remote control of the digital text module DMT-10.



Microphone desk ..... **VLM-206**  
 Microphone desk ..... **VLM-206WO**  
 as VLM-206 but without interface RR-60

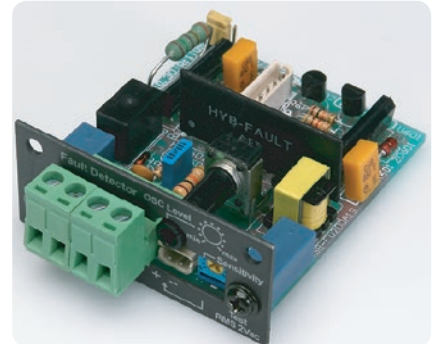
### OPTIONAL | Pilot Tone Module

**FD-21**

#### Description

This pilot tone module serves to monitor the performance of amplifiers.

The generator produces a 20 kHz test signal. Apart from the test of the power amplifier functioning, the speaker line is checked for short circuit faults.



Pilot Tone Module ..... **FD-21**  
 Extension-Module for the VLZ-series

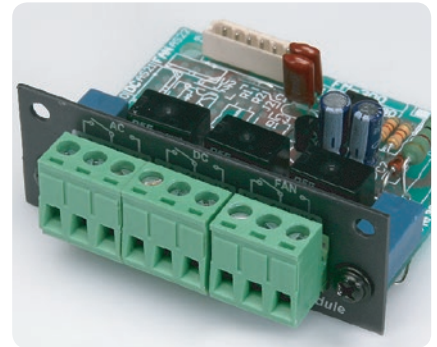
### OPTIONAL | Error Monitoring Module

**FM-30**

#### Description

The Error Monitoring-Module has three potential-free relay contacts (NO/ NC).

Fault monitoring is operating if AC- or DC-fuse is blown and if AC- or DC-power is off or disconnected. Also the module reacts when fan fault or fan is disconnected.



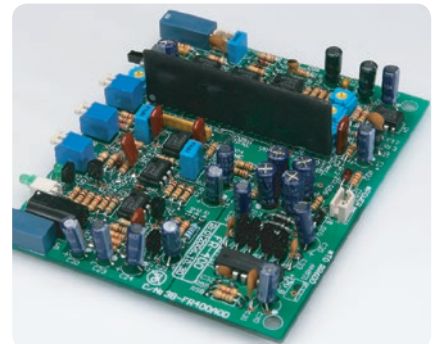
Error Monitoring Module ..... **FM-30**  
 Extension-Module for the VLZ-series

### OPTIONAL | Frequency Shift Module

**FS-40**

#### Description

Module for the reduction of feedback noise (takes only effect at Input 1 of VLZ). The possible frequency shifts of 7 - 10 Hz make sense, even if background music in addition to microphone announcements take place.

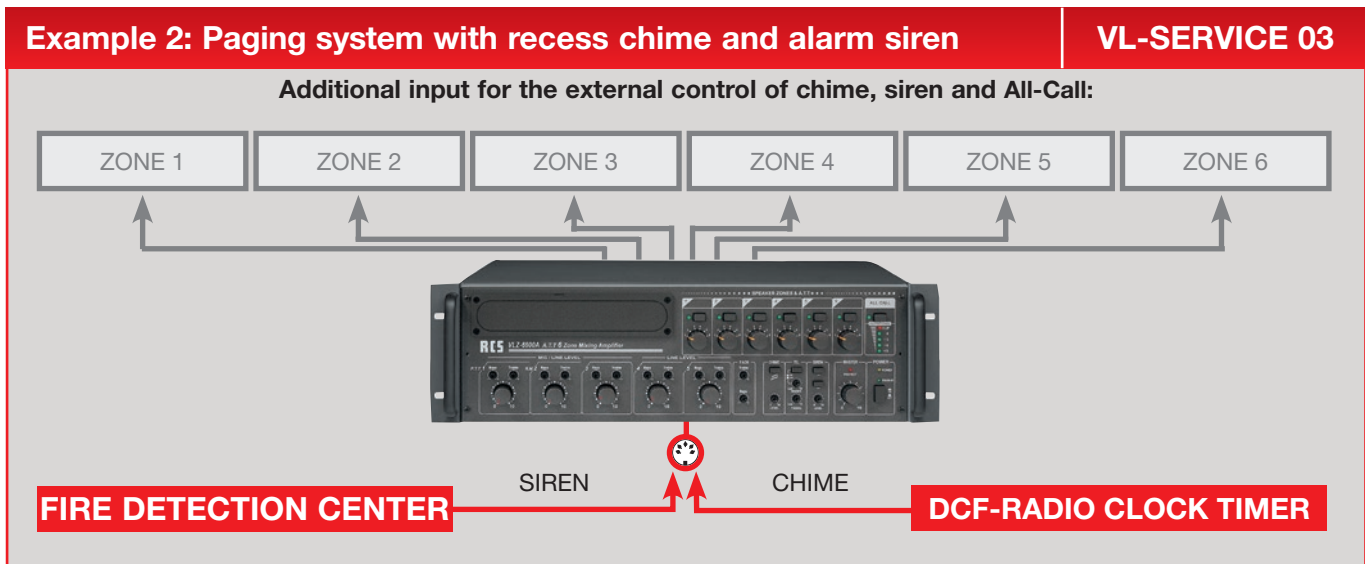
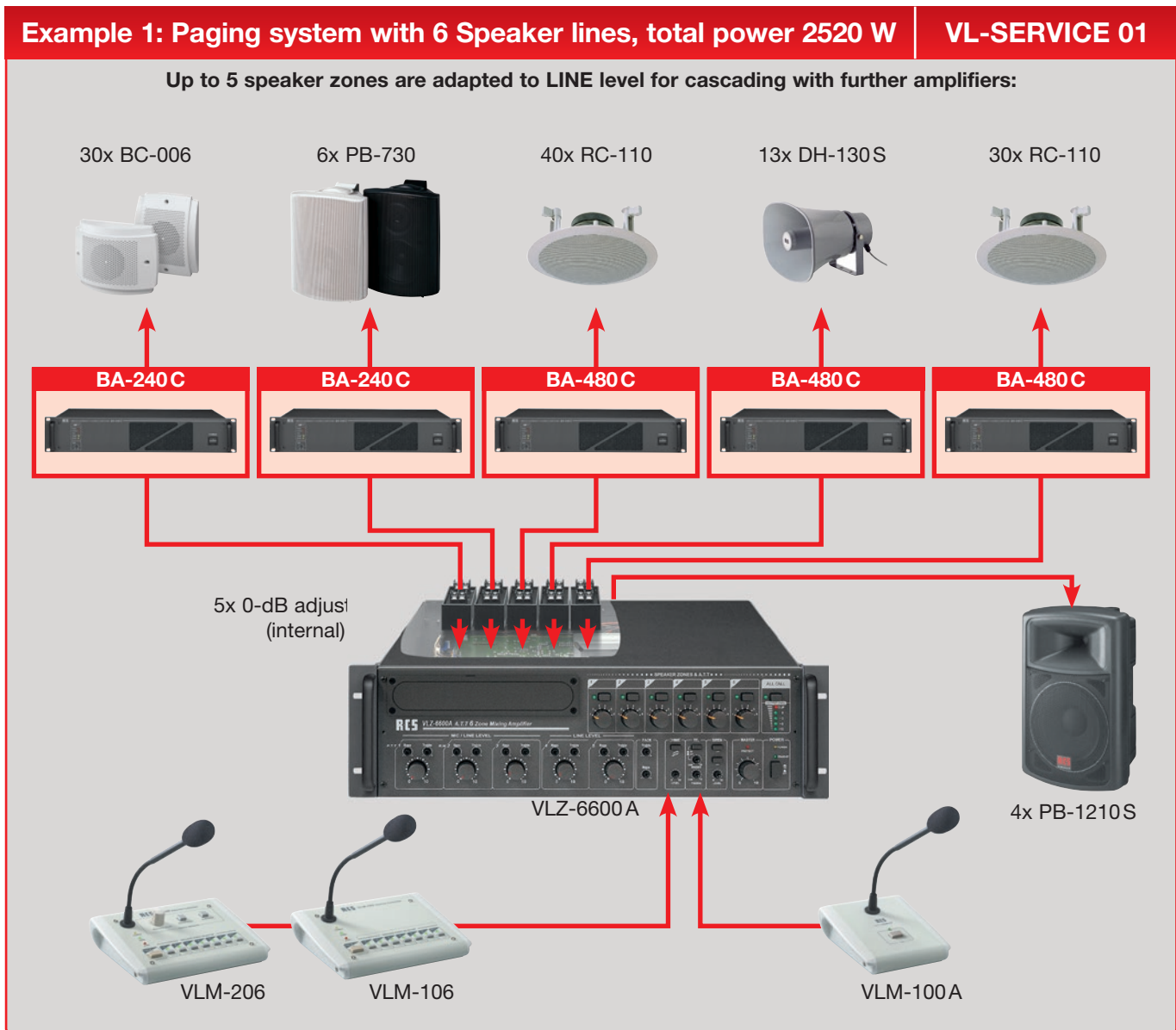


Frequency Shift Module ..... **FS-40**  
 Extension-Module for the VLZ-series

# SPECIAL FUNCTIONS „VARIO-LINE“ 6-ZONES



OPTIONAL



## VLM-100 A | for all-call

Microphone desk (condenser) with pre-announcement chime, priority switching via 7-pin DIN and RJ-45 connection.



Microphone desk ..... **VLM-100A**

## VLM-106 | for 5 zones

Digital microphone desk to select and control 5 speaker zones. Pre-announcement chime and all-call.



Microphone desk ..... **VLM-105**

Microphone desk ..... **VLM-105WO**  
as VLM-105 but without interface RR-10

Function extension module ..... **VLE-004**  
to remote special functions (via separate line)

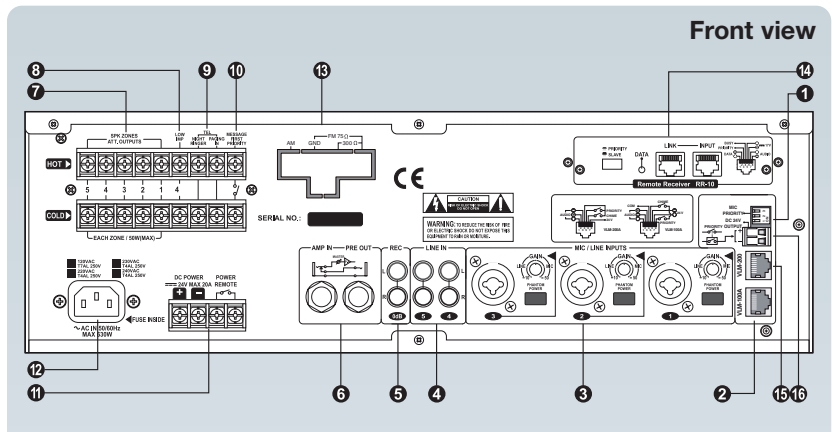
## VLM-205 | for 5 zones & text module

Digital microphone desk to select and control 5 separately speaker zones, further for remote control of the digital text module DMT-10.



Microphone desk ..... **VLM-205**

Microphone desk ..... **VLM-205WO**  
as VLM-205 but without interface RR-10



- 1 Switch for microphone priority, controls the priority of MIC-1, 2 and 3 over the other inputs.
- 2 MIC-1 with chime enables for RCS microphone station VLM-100A with 24 V DC power supply terminal for obligation call relays.
- 3 MIC-LINE input 1 – 3 with gain control on balanced combo sockets (XLR and jack) and phantom power.
- 4 LINE input 4 + 5, unbalanced RCA sockets.
- 5 REC output, unbalanced 0 dB, on RCA sockets.
- 6 AMP-IN and PRE-OUT on 6.3 mm jack, unbalanced.
- 7 100 V and 70 V speaker outputs divided into 5 circuits that can be controlled separately.
- 8 Low-impedance output, 4 ohms.
- 9 NIGHT-RINGER: Contacts for the clearing of the internal bell signal (8-12 V AC necessary).

Switch on frontside to activate or deactivate it.

PAGING-IN: Electronic balanced LINE input with priority function, e.g. for the feed of signals from telephone systems.

- 10 Terminal for priority switching of the DMT-10 digital announcement module. The text of bank 6 can be activated separately, e.g. through the central fire alarm system.
- 11 Terminal for 24 V DC power supply (emergency power supply) and for switching on/off of amplifier.
- 12 IEC power inlet (cold condition).
- 13 Antenna connection cable for the use of TP-10USB tuner modules or CDR-10USB (CD/tuner modules).
- 14 Connection panel for the VLM-105 and VLM-205 remote microphone stations with respective priority switches.
- 15 Connection for VLM-200A on RJ-45
- 16 DC 24V-Output for obligatory call relay (for VLM-100A, VLM-200A)

Technical data	VLA-120 C – VLA-240 C
Output power	VLA-120: 120 W RMS (max. 180 W) – VLA-240C: 240 W RMS (max. 360 W)
Frequency resp., noise level	50 Hz – 18.000 Hz (better than -3 dB), MIC better than 70 dB, LINE better than 80 dB
THD	better than 1% at 1 kHz
Inputs	MIC/LINE 1–3: -50 dBu (2.45 mV), 5 kohms, balanced MIC/LINE 1–3: -10 dBu (245 mV), 5 kohms, balanced LINE 4 – 5: -10 dBu (245 mV), 15 kohms, unbalanced TEL-PAGING: -10 dBu (245 mV), 10 kohms, electr. balanced REMOTE-MIC: -50 dBu (2.45 mV), 5 kohms, unbalanced AMP-IN: 0 dBu (775 mV), 10 kohms, unbalanced
Outputs	REC-OUT: 0 dBu (775 mV), 3 kohms, unbalanced PRE-OUT: 0 dBu (775 mV), 100 ohms, unbalanced
Outputs, speakers	100V or 70 V and 4 ohms low-impedance Controller steps: 100 V – 70 V – 50 V – 25 V – 12.5 V – 8.9 V on 5 zones and all-call
Two- or Fourtone chime	volume can be set on the front panel, chime type switchable by jumper
Siren	continuous tone or high-low, can be set on front panel
Telephone paging	can be set on the front panel (night ringer also adjustable)
Phantom power	on all MIC inputs (combo socket for XLR and 6.3 mm jack)
Treble and bass controls	on the front panel, separately for inputs 1 – 5 and audio source module
Gain	on the front panel for inputs 1 – 3
Priority	can be set separately for MIC 1 – 3 on the rear
Power supply	230 V mains (50/60 Hz) and 24 V DC (emergency power supply)
Power consumption	VLA-120C: 350 W – VLA-240C: 630 W VLA-120 C: 1/8-0,8 A – rated-1.8 A – VLA-240C: 1/8-1.6 A – rated-3,2A
Dimensions W x H x D / Weight	483 x 133 x 352 mm; VLA-120C: approx. 13,0 kg, VLA-240 C: approx. 14,5 kg

Ball-bearing fan ensures long life and quiet running



VLM -100A

VLM - 205

Supplied with 19" mounting brackets.

## Description

The „VARIO-LINE“ amplifier and microphone system permits the switching of up to 5 speaker zones and of the all-call function as well as the setting of the desired volume for each zone from the central unit. The amplifier can be used with any microphone, but has been optimized for the use with the „VARIO-LINE“ microphone stations VLM-100A, VLM-105 (digital remote control of the speaker zones) and VLM-205 (digital remote control of the speaker zones and the DMT-10 digital announcement module).

Please consider the following features:

- Inputs 1 – 3 can be switched to MIC or LINE. The respective volume as well as treble and bass are controlled separately and always have priority over LINE-IN.
- All MIC inputs have gain control and switchable phantom power. The priority switches define the priority of the inputs.
- The MIC inputs are balanced on combo sockets. MIC-1 is additional on RJ-45 socket. The LINE inputs are via RCA sockets.
- The amplifier is equipped with an automatic DC fan as well as with all required protective devices such as overload and overheating protection as well as soft start.
- The AMP-IN and PRE-OUT sockets allow cascading of further amplifiers. The 5 output circuits may also be used for this purpose after they have been modified (0 dB control).
- The amplifier operates on mains power (230 V) or 24 V DC (emergency power supply).
- The unit is also equipped with an electronic 2-tone chime (4-tone chime optional), an electronic siren (high-low, switchable to alarm sound) and a telephone paging system (Line-in with priority); all these signals can be controlled separately on the front panel of the unit.

## Special functions

Special functions such as ground fault detection, remote of chime, siren, deactivation of priority, all-call paging and 0-dB setting element for the power extension can be integrated in the unit. Please consider the options, shown in extracts on the next pages.

- A special feature of all the models of this series is the option for integrating a sound source module into the unit. An empty compartment is provided for the installation of an additional module. The following modules are available:

**FM/AM Tuner module**  
18x FM + 6x AM memory stations

**TP-10USB**



**CD/MP3-Player module**  
Repeat, Random, etc.

**CDP-10USB**



**CD/MP3-Tuner module**  
RDS-Tuner and MP3-/CD-Player

**CDR-10USB**



**Digital text module**  
with timer functions, microSD-Card

**DMT-10**



**BT-Player module**  
USB-Port/SD-Card, Remote

**BM-10U**



For a detailed description of the modules see pages 142 and 143.

## Model designations

Small central unit „VARIO-LINE“, 120 W, 3 RU .. **VLA-120 C**

Small central unit „VARIO-LINE“, 240 W, 3 RU .. **VLA-240 C**

## EXAMPLE 1: Paging system with 5 speaker lines, total power 1680 W

## VL-SERVICE 01

Up to 4 speaker zones are adapted to LINE level for cascading with further amplifiers:

30x BC-006



6x PB-730



40x RC-110



13x DH-130S



1x PB-1210S



BA-240 C



BA-240 C



BA-480 C



BA-480 C



4x 0-dB adjustment  
(internal)



VLA-240 C

VLM-105



VLM-105



VLM-100A



## EXAMPLE 2: Medical practice with chime and siren

## VL-SERVICE 03

Additional input for the external control of chime, siren and All-Call:

Waiting Room

Doctors Room

Corridor 1 & 2

Reception

Treatment Room



FIRE DETECTION CENTER

SIREN



CHIME

DCF-RADIO CLOCK TIMER

## VL-SERVICE 01

### 0-dB adjustment for power extension

The desired numbers of speaker zones are adapted to LINE level for cascading with further amplifiers.

1. Power extension up to 3000 W
2. Separate control- and switchable lines remain
3. 0-dB adjustment internal (please indicate desired number with the order)

0-dB adjustment, for power extension... **VL-SERVICE 01**

## VL-SERVICE 02

### Installation PCM-100

Installation of 5 chime types & DIN-siren

1. Option from 5 different chime types  
1-tone, 2-tone, 3-tone, 4-tone, Westminster
2. To be controlled separately via potential-free contacts
3. Siren compliant to DIN 33404

Installation PCM-100..... **VL-SERVICE 02**

## VL-SERVICE 03

### Input for the external control of 4-tone chime, siren and All-Call

Input for the external control of 4-tone chime, siren and All-Call:

1. For release of chime and siren via potential free contacts, e.g. by BMZ, clock timer, remote microphone etc.
2. Simultaneous release of All-Call
3. 2-tone chime as pre-chime of remote mic.

Input for the external control.... **VL-SERVICE 03**

## VL-SERVICE 05

### Potential free contacts

Input for potential free contacts for external control of the 5 or 6 speaker lines:

1. Easy activation of desired speaker lines, e.g. via substation, key pad or clock timer
2. 7-pin DIN-socket as interface

Potential free contacts..... **VL-SERVICE 05**

## VL-SERVICE 06

### Ground leak monitoring

Module installation for ground leak monitoring:

1. Monitoring of the 100V-outputs for ground leak
2. Alarm tone at fault

Ground leak monitoring..... **VL-SERVICE 06**

## VL-SERVICE 07

### Microphone station extension

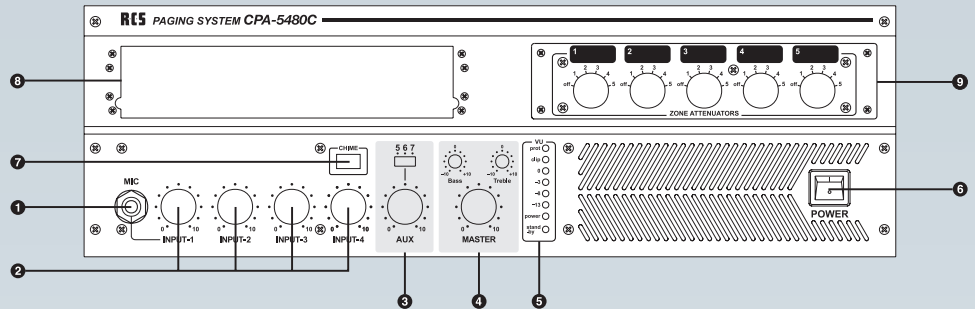
Attachment of the key modules in the VLE-004 Microphone stations VLM-105/106/205/206. The extension provides the following additional features:

1. Covered alarm switch
2. Two LEDs to indicate an error
3. Three keys for special functions

Microphone station extension.... **VL-SERVICE 07**

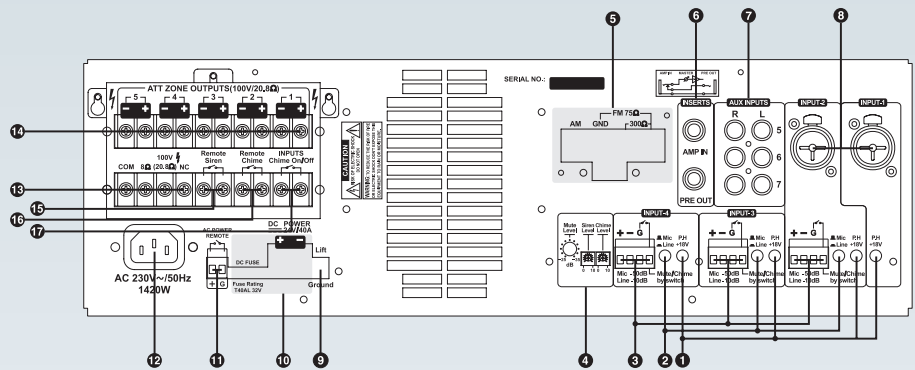
### Front view

- 1 Input for Mic 1 (priority)
- 2 Controls for Input 1-2-3-4
- 3 Control and switch for AUX 5-6-7
- 4 Master volume control and bass/ treble controls
- 5 LED for operating status
- 6 Power switch
- 7 Chime switch to trigger chime
- 8 Empty compartment for installation of sound source modules
- 9 5-zone switch and control panel



### Rear view

- 1 Phantom power switch for input 1-2-3-4
- 2 MIC/LINE selector switch for input 2-3-4
- 3 Balanced inputs on screw-type connectors (MS-050)
- 4 Controls for chime, siren and mute level
- 5 Blank panel for antenna of TP-10 USB and CDR-10 USB or remote control of DMT-10 announcement module
- 6 AMP-IN and PRE-OUT on 6.3 mm jack, unbalanced
- 7 AUX input 5-6-7 on RCA sockets
- 8 Input 1-2 on combo sockets (XLR and jack)
- 9 Ground lift switch
- 10 24 V DC connection
- 11 Remote switch-on via „Power Remote“
- 12 IEC power inlet (cold condition)
- 13 8 ohms and 100V / 70 V outputs
- 14 5 Switchable and adjustable speaker outputs (100V or 70 V)
- 15 Remote control for siren
- 16 Remote control for two-tone chime
- 17 Contact for pre-announcement chime input 2-3-4 (factory supplied with bridge)



Technical data	CPA-5120C	CPA-5240C	CPA-5480C
Output power	120 W (RMS)	240 W (RMS)	480 W (RMS)
Frequency range	Mic: -3dB (200Hz ~ 19 kHz) Line: -3dB (35Hz ~ 19 kHz)		
THD at 1 kHz	less than 0,5%		
Inputs	Input 1 Mic : -50dB (2,45mV) / 2 k ohms, balanced Input 2-4 Mic: -50dB (2,45mV) / 2 k ohms, balanced. Line -10dB (245mV), balanced Input 5-7 AUX: -10dB (245mV) / 5 k ohms, unbalanced Pack Unit: -10dB (245mV) 10 k ohms, unbalanced PRE OUT: 0dB (775mV) 100 ohms, unbalanced AMP IN: 0dB (775mV) 10 k ohms, unbalanced		
Outputs, speakers	70 V or 100V and low-impedance outputs 8 ohms		
Treble and bass controls	Bass: ±10dB at 100Hz Treble: ±10dB at 10 kHz		
Signal-to-noise ratio	Mic: > 70 dB Line: > 80 dB		
Power consumption	max. 1,8 A	max. 3,2 A	max. 7,5 A
Power supply	230 V (AC - 50-60Hz) mains power and 24 V DC		
Dimensions (WxHxD) / Weight	430 x 133 x 352 mm, 3 RU; approx. 14 kg	approx. 16,5 kg	approx. 20 kg

3 power classes  
120-240-480 W



**Description**

The PA center of the „CPA-5000 Series“ is available in 3 power classes: **120 W**, **240 W** and **480 W**. The units include 5 100V and 70 V speaker circuits, which can be switched and controlled separately.

They feature chime, siren, phantom power and priority switching and are well-suited for professional audio applications.

Please consider the following features:

- The PA center operates on mains power (230 V) or 24 V DC.
- The speaker outputs are available as 100V and 70 V as well as 8 ohms (low-impedance) outputs.
- All models have 5 speaker circuits which can be controlled separately on the front panel.
- All microphone inputs are balanced and have switchable phantom power. Inputs 2, 3 and 4 can be switched to line.
- Mic input 1 has an adjustable electronic priority control.
- The AMP-IN and PRE-OUT sockets on the rear allow cascading of further amplifiers and insertion of other units such as equalizers.
- The two-tone chime and the siren can be remote-controlled and can be adjusted on the rear.
- Input 1 has voice-activated priority override, inputs 2-3-4 have contact-activated priority over AUX 5-6-7.
- The special **MS-050P** microphone station is connected through a 4-pin screw-type connector (a maximum of 3 microphone stations can be connected). It has a function to enable pre-announcement chime and priority.

- A special feature of all the models of this series is the option for integrating a sound source module into the unit. An empty compartment is provided for the installation of an additional module. The following modules are available:

**FM/AM Tuner module**  
18x FM + 6x AM memory stations  
**TP-10USB**

**CD/MP3-Player module**  
Repeat, Random, etc.  
**CDP-10USB**

**CD/MP3-Tuner module**  
RDS-Tuner and MP3-/CD-Player  
**CDR-10USB**

**Digital text module**  
with timer functions, microSD-Card  
**DMT-10**

**BT-Player module**  
USB-Port/SD-Card, Remote  
**BM-10U**

For a detailed description of the modules see pages 142 and 143.

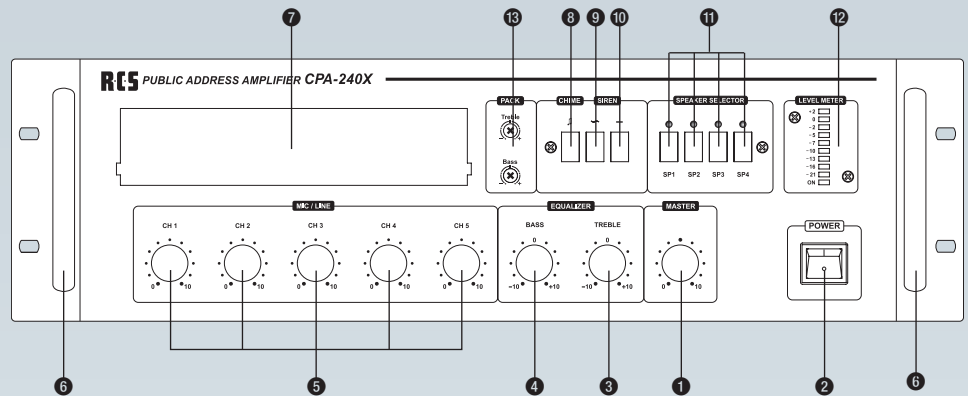
**Model designations**

- Small central unit, 120 W** (3 RU) ..... **CPA-5120C**
- Small central unit, 240 W** (3 RU) ..... **CPA-5240C**
- Small central unit, 480 W** (3 RU) ..... **CPA-5480C**

**Desktop microphone station** ..... **MS-050P**  
Screw-type connector, balanced, pre-announcement chime, priority

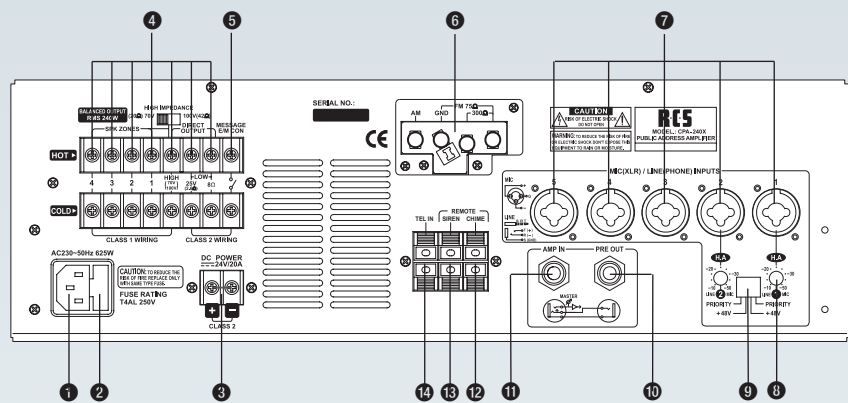
Front view

- 1 Master volume
- 2 Power switch
- 3 High frequency control
- 4 Low frequency control
- 5 CH 1-5 volume MIC / LINE
- 6 Handle
- 7 Accessory port
- 8 Chime switch
- 9 Siren switch up-down siren
- 10 Siren switch constant siren
- 11 Speaker selector
- 12 LED level meter
- 13 Tone controller for audio source module (pack)



Rear view

- 1 AC inlet socket
- 2 AC fuse holder
- 3 DC power input terminals
- 4 Speaker terminal
- 5 Contact to activate priority if digital text module DMT-10 is in use
- 6 Antenna terminals (only if tuner is installed)
- 7 MIC / LINE inputs 1 – 5
- 8 Gain-Control
- 9 Switch phantom power / priority
- 10 PRE-OUT, jack 6,3 mm, asym.
- 11 AMP-IN, jack 6,3 mm, asym.
- 12 Chime remote contact
- 13 Siren remote contact
- 14 TEL-IN terminal, absolute priority



Technical data	CPA-120X	CPA-240 X
Output power	120 W RMS (max. 180 W)	240 W RMS (max. 360 W)
Frequency resp., noise level	80 Hz – 15.000 Hz ( $\pm 3$ dB), noise level MIC better than 60 dB, AUX/LINE better than 70 dB	
THD at 1 kHz	better than 1 %	
MIC – AUX/LINE inputs	All Mic/Line-Inputs are electronically balanced. Input 1+2 with priority. All Inputs feature Combo-females (Jack 6.3 mm, XLR) Mic: -50dB (2,45 mV), Line: -10dB (245 mV)	
Outputs, speakers	100V – 70 V – 25 V, low impedance 8 ohms	
Additional input or output	AMP-IN: +4dB (1,23 V), PRE-OUT: +4dB (1,23 V)	
Two-tone chime and siren	Two-tone chime can be remote-controlled, siren optional with high-low or continuous tone.	
Power supply AC/DC	AC 230 V (50/60 Hz), DC 24 V	
Dimensions (WxHxD) / Weight	483 x 133 x 350 mm; 11 kg	483 x 133 x 350 mm; 13 kg

2 power classes  
120 W / 240 W



**Description**

The new PA centers CPA-120X/240X features 4 switchable 100V or 70 V speaker lines. The amplifier power amounts 120W/240W. Further features, the external controllable chime, 2 different types of siren, the insertable phantom power as well as an integrated priority function. The device is in the best way suitable for professional application.

Please consider the following features

- The inputs 1 and 2 are switchable from Mic. to LINE. Both XLR and jack plug (6.3 mm) can be used.
- The inputs 3 – 5 can process both Mic. and LINE signals (XLR = Mic; jack = LINE).
- All Mic/Line inputs are electronically balanced, whereby priority and phantom voltage can be assigned to inputs 1 and 2.
- The amplifier can be operated with 230 V AC or with 24 V DC.
- Additionally to the 4 lines, one 100V-, one 70 V- and one 8 ohms output are available as unswitched speaker outputs.
- For cascading with further amplifiers as well as for feeding in external tone sources, an AMP-IN and a PRE-OUT are featured.
- An additional TEL-IN enables feeding in line signals with priority.
- The 2-tone chime is remote-controlled and can be released e.g. by a school clock or a substation.

- This model offers the option to insert a sound source module into the unit. The following modules are available:

**FM/AM Tuner module**

18x FM + 6x AM memory stations

**TP-10USB**



**CD/MP3-Player module**

Repeat, Random, etc.

**CDP-10USB**



**CD/MP3-Tuner module**

RDS-Tuner and MP3-/CD-Player

**CDR-10USB**



**Digital text module**

with timer functions, microSD-Card

**DMT-10**



**BT-Player module**

USB-Port/SD-Card, Remote

**BM-10U**



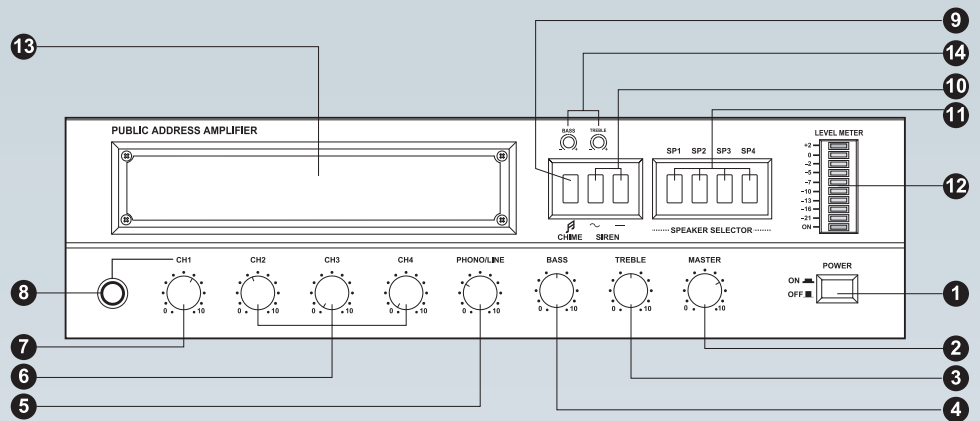
For a detailed description of the modules see pages 142 and 143.

**Model designations**

- Small central unit, 120 W** RMS, 3 RU ..... **CPA-120X**
- Small central unit, 240 W** RMS, 3 RU ..... **CPA-240X**

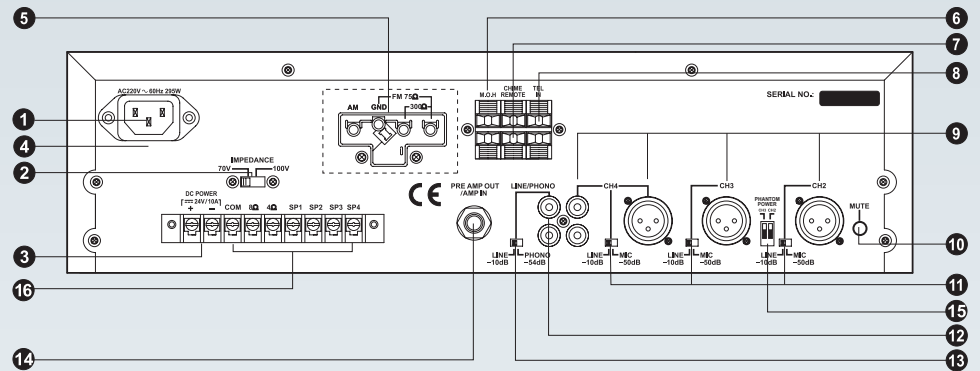
### Front view

- 1 Power switch
- 2 Master control
- 3 Treble control
- 4 Bass control
- 5 PHONO / LINE control
- 6 Controls for MIC / AUX 2-3-4
- 7 Control for MIC 1
- 8 MIC 1 input
- 9 Two-tone chime button
- 10 Siren signal buttons
- 11 Buttons for speaker lines 1-4
- 12 Output indicator
- 13 Empty field for the sound source modules



### Rear view

- 1 Power inlet
- 2 Impedance switch 100V – 70 V
- 3 24 V DC power supply
- 4 Fuse holder (AC and DC)
- 5 Optional: Antenna inputs (only with modules TP-10USB and CDR-10USB)
- 6 Contact for the release of text 6 at DMT-10
- 7 Remote control for two-tone chime
- 8 LINE-input with priority e.g. for telephone center
- 9 Inputs for MIC / LINE 2 - 3 - 4
- 10 Priority control for MIC 1
- 11 LINE selector switch for MIC / LINE
- 12 PHONO / LINE input
- 13 PHONO / LINE selector switch
- 14 Pre-amplifier OUT, amplifier IN
- 15 Phantom power switch for CH2 / CH3
- 16 Speaker terminal strip



Drawing shows model CPA-3120C

Technical data	CPA-3060 C	CPA-3120 C
Output power	60 W RMS (max. 90 W)	120 W RMS (max. 180 W)
Frequency resp., noise level	50 Hz – 18.000 Hz (± 3 dB), noise level MIC better than 60 dB, AUX/LINE better than 70 dB	
THD at 1 kHz	better than 1 %	+better than 1 %
MIC - AUX/LINE inputs	All MIC and AUX / LINE inputs as well as CH-5 (LINE/PHONO) are electronically balanced, MIC-1 (CH-1) with priority override (adjustable) With all models, inputs 2, 3 and 4 (CH 2, 3 and 4) are balanced on 3-pin XLR-sockets, the other inputs are on jack (6.3 mm) or RCA	
Outputs, speakers	100V – 167 ohms, 70 V – 83 ohms, 4 – 8 ohms	100V – 83 ohms, 70 V – 41 ohms, 4 – 8 ohms
Additional input or output	Serves as pre-amplifier output or amplifier input.	
Two-tone chime and siren	Two-tone chime can be remote-controlled, siren optional with high-low or continuous tone.	
Power supply AC/DC	AC 230 V (50/60 Hz), DC 24 V	AC 230 V (50/60 Hz), DC 24 V
Dimensions (WxHxD) / Weight	420 x 110 x 320 mm, 10,0 kg	420 x 110 x 320 mm, 12,0 kg

2 power classes  
60 W / 120 W



**Description**

The „CPA-3000 PA-center Series“ are available in 2 power classes: 60 W (RMS) and 120 W (RMS). They are short circuit and open circuit proof. They have been designed to the latest standards and meet the requirements of professional audio applications. All the devices of this series are equipped with an electronic two-tone chime (switchable to four-tone), a siren (continuous tone or high-low tone), a speaker control panel (4 zones).

Please consider the following features:

- All the devices of this series operate both on 230 V mains power and 24 V DC.
- The speaker outputs are available as 100V and 70 V as well as 4 and 8 ohms low-impedance outputs.
- MIC input 1 has an adjustable electronic microphone priority override.
- All microphone inputs are electronically balanced. Inputs 2, 3 and 4 can be switched to LINE. The input 2 and 3 can be switched to phantom power.
- The unit also includes the following special features: CD input on RCA sockets, PHONO input on RCA sockets, pre-amplifier input and output, remote control for four-tone chime, input for central telephone system.
- To obtain the desired power, further 19" power amplifiers can be cascaded.
- With all models, the two-tone chime can be remote-controlled, e.g. by means of the MS-202 microphone station.



Picture shows RMK-10

- A special feature of all the models of this series is the option for integrating a sound source module into the unit. An empty compartment is provided for the installation of an additional module. The following modules are available:

**FM/AM Tuner module**  
18x FM + 6x AM memory stations  
**TP-10USB**

**CD/MP3-Player module**  
Repeat, Random, etc.  
**CDP-10USB**

**CD/MP3-Tuner module**  
RDS-Tuner and MP3-/CD-Player  
**CDR-10USB**

**Digital text module**  
with timer functions, microSD-Card  
**DMT-10**

**BT-Player module**  
USB-Port/SD-Card, Remote  
**BM-10U**

For a detailed description of the modules see pages 142 and 143.

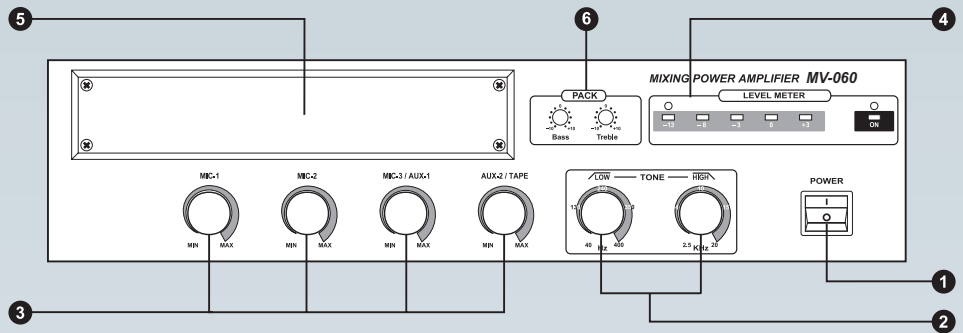
**Model designations**

- Small central unit, 60 W RMS ..... **CPA-3060 C**
- Small central unit, 120 W RMS ..... **CPA-3120 C**

- 19"-rack mounting kit, 3 RU ..... **RMK-10**

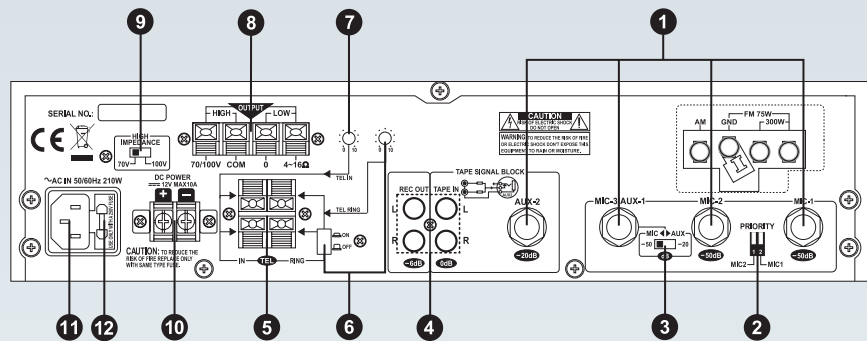
Front view

- 1 Power switch, power LED lit when switched on
- 2 Treble and bass controls; Bass control adjustable from 40 Hz – 400 Hz and treble control adjustable from 2.5 kHz – 20 kHz
- 3 Separate volume controls for Mic and Aux inputs
- 4 LED level meter for indication of signal level
- 5 Empty compartment for the installation of the sound source modules TP-10 USB or DMT-10
- 6 Treble and bass controls for sound source module



Rear view

- 1 Balanced MIC and AUX inputs
- 2 Switch for priority activation
- 3 MIC-AUX selector switch for input MIC3
- 4 RCA sockets for TAPE IN and REC OUT
- 5 Terminals for TEL IN and TEL RING
- 6 Volume control for „TEL RING“ input
- 7 Volume control for „TEL IN“ input
- 8 Speaker terminals
- 9 Impedance selector switch 100V or 70 V
- 10 12 V DC power supply
- 11 IEC power inlet (cold condition)
- 12 AC fuse, DC fuse is inside the amplifier



Drawing shows model MV-060

Technical data	MV-030	MV-060
Output power	30 W RMS (max. 45 W)	60 W RMS (max. 90 W)
Frequency range	150 Hz ~ 18 kHz	150 Hz ~ 18 kHz
THD at 1 kHz	less than 1 %	less than 1 %
Inputs	MIC: – 50 dB/2 kohms, balance AUX1: – 20 dB/60 kohms, balanced AUX2: – 20 dB/15 kohms, balanced TAPE: 0 dB/3 kohms, balanced	MIC: – 50 dB/2 kohms, balanced AUX1: – 20 dB/60 kohms, balanced AUX2: – 20 dB/15 kohms, balanced TAPE: 0 dBu/3 kohms, unbalanced
Outputs, speakers	100V – 70 V and 4 ~ 16 ohms low-impedance outputs	100V – 70 V and 4 ~ 16 ohms low-impedance outputs
Treble and bass controls	Bass 40 Hz ~ 400 Hz, – 6 dB/Oct – Treble 2,5 kHz ~ 20 kHz, – 6 dB/Oct	Bass 40 Hz ~ 400 Hz, – 6 dB/Oct – Treble 2,5 kHz ~ 20 kHz, – 6 dB/Oct
Signal-to-noise ratio	MIC: > 60 dB – AUX: > 70 dB	MIC: > 60 dB – AUX: > 70 dB
Current consumption	max. 0,55 A	max. 1 A
Power consumption	125 W	210 W
Power supply	230 V mains current and 12 V DC	230 V mains current and 12 V DC
Dimensions WxHxD /Weight	375 x 88 x 260 mm; approx. 5,4 kg	375 x 88 x 260 mm; approx. 6,6 kg

2 power classes  
30 W / 60 W



## Description

In spite of its small dimensions, this versatile desktop amplifier offers the option for installing additional audio modules in the empty compartment provided.

The device is available in 2 power classes: 30 W and 60 W (sine wave). It is perfectly suited for professional audio applications. The unit operates on mains power (230 V) or DC (12 V).

Please consider the following features:

- The amplifiers have 2 balanced MIC inputs with **switchable priority**, 2 balanced AUX inputs, of which one can be switched from AUX to MIC, and 1 unbalanced TAPE input.
- To compensate for the effects of noise, the inputs are electronically balanced, which ensures high immunity to interference.
- All inputs have a separate volume control. Additionally there are treble and bass controls (equalizer).
- The speaker outputs are available as 100 V and 70 V outputs or alternatively as 4 – 16 ohms low-impedance outputs.
- As the amplifier can operate both on 230 V AC and 12 V DC, a car battery may also be used for power supply.
- LEDs indicate the signal level. Operation in the clipping range of +3 dB (red diode) should be avoided.
- Via the TEL RING terminal a telephone buzzer can be activated. The TEL IN terminal provides the option for outputting announcements from the central telephone system via the amplifier.

- There is a blank field for the installation of an antenna terminal or the control output of the DMT-10 digital announcement module.
- A special feature of all the models of this series is the option for integrating the following sound source modules into the empty slot:

**FM/AM Tuner module**  
18x FM + 6x AM memory stations

**TP-10 USB**



**Digital text module**  
with timer functions, microSD-Card

**DMT-10**



**BT-Player module**  
USB-Port/SD-Card, Remote

**BM-10 U**



For a detailed description of the modules see pages 142 and 143.

## Model designations

Desktop amplifier, 30 W.....	<b>MV-030</b>
Desktop amplifier, 60 W.....	<b>MV-060</b>

**RDS  
USB**



FM/AM-Tuner module

Technical data	TP-10 USB
Wavebands	FM 87,5 bis 108,0 MHz and AM 522 bis 1.620 kHz
Antenna inputs	75 ohms unbalanced; with coax-jack and antenna
Sensitivity	FM: 2 µV; AM: 4,5 µV
S/N	FM: 60 dB; AM: 45 dB
Dimensions (WxHxD) / Weight	194 x 40 x 84 mm; approx. 0,25 kg

FM/AM-Tuner module ..... **TP-10USB**

### Description

The TP-10USB FM/AM tuner module has been especially developed for installation in the compartment provided for this purpose on the PA center. The modules can be installed very easily. The required fasteners and connectors as well as detailed installation instructions are supplied with.

- The modules can also be installed in any other device (amplifier, central audio unit, etc...).
- The tuner has 24 pre-sets, 3 x 6 for FM and 1 x 6 for AM.
- Tuning and programming is performed with the respective buttons.
- USB Interface

**MP3  
USB**



USB CD/mp3 player module

Technical data	CDP-10 USB
S/N – THD	Better than 85 dB – less than 0,03 % (1 kHz)
Frequency range	10 Hz – 20.000 Hz (± 1 dB)
Digital-Filter	8x over sampling
Loading Time	6 sec.
Dimensions (WxHxD) / Weight	194 x 40 x 200 mm; approx. 1,0 kg

CD/MP3 Player module ..... **CDP-10USB**

### Description

The CDP-10USB CD/mp3 player module has been especially developed for installation in the compartment provided for this purpose on the PA centers. However, it is possible to install the module in any other device such as amplifiers, central audio units, etc.

The respective installation instructions are supplied with the device.

- The device features „repeat play“ and „random play“ functions.
- Other functions included are „intro scan play“ and „cue review“.
- Playing mp3 CD's.

**MP3  
USB**

**RDS**



MP3/CD player and FM/AM tuner module

Technical data	CDR-10 USB
Tuner section	Analogous to the TP-10RDS FM/AM tuner module described on the next page
CD/MP3-player section	Analogous to the CDP-10USB CD player module described above
Dimensions (WxHxD)	194 x 40 x 200 mm
Weight	approx. 1,0 kg

CD/MP3 player and tuner module (RDS) ..... **CDR-10USB**

### Description

The CDR-10USB MP3/CD player and FM/AM tuner module has been especially developed for installation in the compartment provided for this purpose on the PA centers. However, it is also possible to install the module in other devices such as amplifiers, central audio units, etc. The respective installation instructions are supplied with the device.

- The features of the CD player section are identical with the CDP-10USB module above.
- The features of the tuner section are the same as the ones of the TP-10USB module described above.
- USB interface

## Description

The DMT-10 digital announcement module has been especially developed for installation in the compartment provided for this purpose on the PA centers. It can be installed in a module pre-amplifier (ME-2A) or other PA amplifiers.

- Direct selection of 6 memory texts on Front keys, external contacts or desktop microphone unit.
- Timer function for 26 texts / signals with weekly function
- Connecting a radio receiver DCF-77 to control the internal quartz clock (summer and winter time).
- Connecting an alarm contact for a priority signal with priority function.
- Recording capability on the front side LINE signal or dynamic microphone.
- Uploading the texts as mp3 on a microSD-card.



Digital-Text module with Timer

Technical data	DMT-10
Power supply	15V – 18V DC, via PA center
Display	LCD display, two lines; Menu navigation and time display
Inputs	MIC: -50dB/600Ohms, LINE: -10dB/10kOhms unbal.
Outputs	Audio Out: -10dB unbal.; Headphone jack 3,5mm; jack: 24mW >- 64 ohms
Media	microSD-Card, internal memory
Storage capacity	M1 – M6 each 2176 kB (360 sec.); VOICE1 – VOICE20 each 128 kB (23 sec.)
Dimensions (WxHxD) / weight	194 x 40 x 85 mm; 0,27 kg

## Model designations

- Digital text module with timer ..... **DMT-10**
- Radio receiver DCF-time, 3-wire version ..... **DMF-077**

## Description

The BT player module BM-10U is suitable for installation in the corresponding empty field of the small central units or module carriers.

- Direct audio transmission via BT from PC, tablet or smartphone.
- Play various audio files from an SD card, a USB stick or an external USB hard disk.
- All functions can also be controlled via the supplied remote control.
- Graphic display showing the playing time, track numbers, functions, audio levels and player modes.



For audio transmission from smartphone, tablet or PC, incl. Remote control

Technical data	BM-10U
Power supply	12V DC, via PA Center
Display	LCD graphic display, menu guidance and time display
Inputs	SD-Card, USB-Port (Stick, HD or PC), BT (Audio)
Power consumption	40 mA
Dimensions (WxHxD)	194 x 40 x 53 mm
Weight	0,2 kg

- BT-Player module, USB-Port/SD-Card, Remote ..... **BM-10U**

## SOUND SOURCE MODULES

These modules can be installed optionally into the provided empty compartments of Small Central units or module pre-amplifiers.

Attention: some modules can be upgraded only from the factory!





Supplied with 19" mounting brackets.

## Description

The ME-2A modular preamplifier serves to transmit sound programmes by means of the modules that are shown on the right. For this purpose, the ME-2A can be extended by 1 or 2 modules, whereas the ME-4A can be extended by up to 4 modules. The individual modules can be installed very easily. All required connections are provided inside the unit or on the rear.

Please consider the following features:

- The ME-2A has 2 separate balanced XLR outputs (module 1 and 2) and 1 master output. The volume is controlled by means of a volume control of the respective module.
- The ME-4A has 4 separate balanced XLR outputs (module 1, 2, 3 and 4) and 1 master output. The volume is controlled by means of a volume control of the respective module.

Technical data	ME-2 A	ME-4 A
Output impedance	max. 0.775 V (0 dBu), 600 ohms, unbalanced on XLR	
Frequency range	less than -0,5 dB) 20 – 20.000 Hz	
Signal-to-noise ratio	better than 68 dB	
Power supply	AC 230 V (50 – 60 Hz), DC 24 V	
Power consumption	approx. 25 W	approx. 55 W
Dimensions (WxHxD)	483 x 88 x 350, 2 RU	483 x 133 x 350, 3 RU
Weight	approx. 5,0 kg	approx. 6,0 kg

## Model designations

- Modular pre-amplifier, (2 RU) ..... ME-2A**  
**Modular pre-amplifier, (3 RU) ..... ME-4A**

- The device operates on 230 V AC mains power and 24 V DC (emergency power supply).
- The device can be used both as a 19" unit and as a desk-top unit. The 19" mounting brackets are already fitted, but can be easily removed.
- The modular preamplifier can be connected directly to any mixer amplifier, but also to any power amplifier.
- The following sound source modules are available for installation in the ME-2 A and ME-4 A modular pre-amplifier.

### FM/AM Tuner module

18x FM + 6x AM memory stations

**TP-10USB**



### CD/MP3-Player module

Repeat, Random, etc.

**CDP-10USB**



### CD/MP3-Tuner module

RDS-Tuner and MP3-/CD-Player

**CDR-10USB**



### Digital text module

with timer functions, microSD-Card

**DMT-10**



### BT-Player module

USB-Port/SD-Card, Remote

**BM-10U**



# 19"-MODULAR PRE-AMPLIFIER (for up to 2 modules)



## Description

The module carrier ME-1A offers in just one rack unit, the possibility to mount up to two audio modules, to save space. The modules of the AM-Series can be combined as necessary depending on.

On the back there is a L/R output per module and an additional output priority. The signal from the built-in module 2 (on the right side) has output priority. Ends the playback of this module, it automatically switched to module 1.

A 75 ohm antenna input and the 24V DC input complete the multi-purpose device.

Please consider the following features:

- The ME-1 A has a priority output.
- The device operates on 230 V AC mains power and 24 V DC (emergency power supply).
- Suitable for 19" mounting or table top.

★

**PLL Synthesizer Tuner**  
12x FM station memory

**AM-100 TU**



**DVD/CD/USB/SD-Player**  
with Remote control

**AM-100 DV**



**CD/USB/SD-Player**  
with Pitch-, Remote control and AUX

**AM-201 CD**



**BT-Player-Modul**  
USB-Port/SD-Card, Fernbedienung

**AM-100 BT**



Technical data	ME-1 A
Module slots	2
Outputs	Stereo Cinch channel 1; Stereo Cinch channel 2; Stereo Cinch priority
Inputs	75 ohms coaxial antenna; draft antenna; Record In Stereo Cinch
Power supply	230 V power supply; 24 V DC
Scope of supply	Module carrier ME-1 A, 3 pcs. audio cable Cinch, power supply cable
Dimensions (WxHxD)	483 x 43 x 295 mm, 1 RU
Weight	2,8 kg

## Model designation

**Modular pre-amplifier, (1 RU) ..... ME-1 A**



### Description

The TU-110RDS FM-AM tuner is incorporated in a stable 19" housing which is 1 RU high. The stations are indicated on a backlit digital display.

30 station presets (FM 3 x 6 and AM 2 x 6) are available. A station can be stored by pressing the respective button on the clearly designed control panel.

The tuner operates on 230 V mains power as well as on 24 V DC power (operation with emergency power supply).

The device has a balanced XLR output and an unbalanced RCA output. Both outputs can be controlled on the front panel.

Please consider the following features:

- 3 FM bands and 1 AM band, each with 6 memory stations.
- Automatic and manual tuning.
- 75 ohms FM antenna connection via coaxial jack.
- The signal strength is indicated through 5 LEDs.

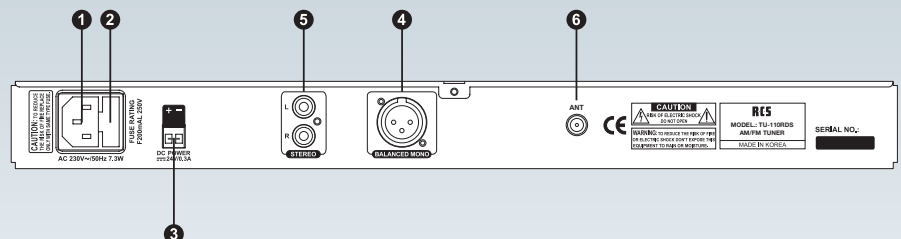
- The output volume can be adjusted on the front panel.
- Clearly LCD display.

★

Technical data	TU-110 RDS
Station presets	18 FM / 6 AM
Antenna input	FM: 75 ohms coax / AM: draft antenna
Signal-to-noise ratio	FM: 60 dB / AM: 40 dB
XLR output level	0,775 V (0 dBm) balanced (mono)
RCA output level	0,245 V (-10 dBm) unbalanced (stereo)
Power supply	230 V mains / 24 V emergency power supply
Dimensions (WxHxD)	483 x 44 x 200 mm; 1 RU
Weight	2,45 kg

### Rear view

- 1 230 V power inlet
- 2 Fuse holder
- 3 Terminal for 24 V emergency power supply
- 4 Balanced XLR output
- 5 Unbalanced RCA output
- 6 Antenna connections



### Model designation

19"-Tuner, (1 RU)..... **TU-110RDS**

# 19"-DAB INTERNET RADIO / MULTI-TUNER



## Description

For music lovers, and friends of the digital listening pleasure. Experience crystal-clear radio and the variety of more than 20,000 radio stations and podcasts 8,000. If LAN or WLAN is not available, the device includes at the same time a DAB tuner, which allows terrestrial digital radio.

In addition to the radio function, the device has a USB interface. This allows you to play audio files on a USB stick, MP3 player or an external hard drive. Supported formats are AAC/AAC +, MP3, WMA and WAV.

In the very clearly arranged multilingual menu, you can edit your channel list, take equalizer settings or set up your Internet access (if available).

Please consider the following features:

- Multi-tuner to receive Internet radio, FM radio with RDS, DAB and DAB +.
- Easy setup of Internet Radio stations through clear country, transmitter and genre selection.
- Headphone output.

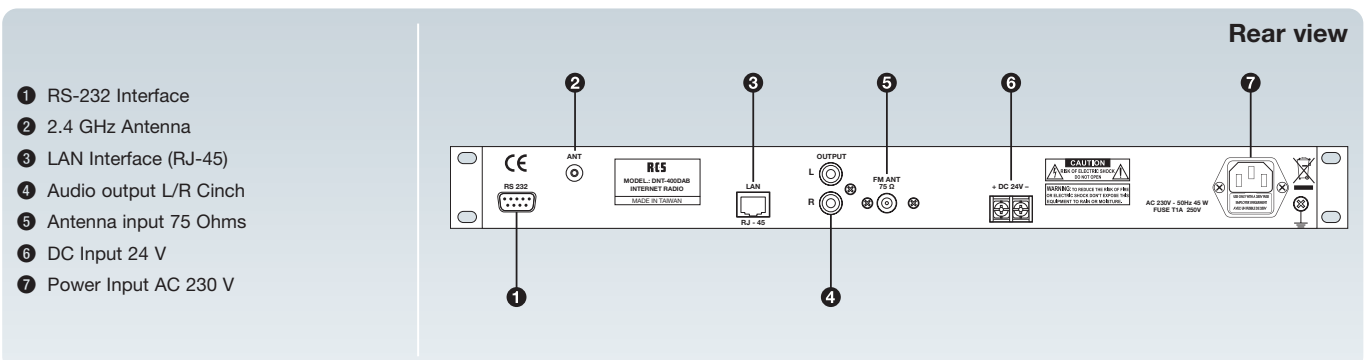
- Front panel auxiliary input for supplying external signals.
- 19" design (1 RU) for installation in system control centers.

★

An infrared remote control with key operating functions is included.



Technical data	DNT-400 DAB
FM tuning range	87,5 – 108 MHz
Antenna input FM	75 Ohms, coaxial
DAB-Frequency range L-Band	1452,96 – 1490,62 MHz
DAB-Frequency range Band III	175,928 – 239,2 MHz
USB-Version	1.1/2.0, FAT/FAT32
Audio output	Cinch, 0 dB, unbalanced
Audio frequency range	20 – 20.000 Hz
Dimensions (WxHxD)	483 x 44 x 150 mm (1 RU, 19")
Weight	2,8 kg



## Model designation

19"-DAB Internet Radio Multi-Tuner, (1 RU) incl. Remote control ..... **DNT-400 DAB**



### Description

The DVD-player DVD-200X will be delivered in a 2 RU-cabinet and therefore it is perfectly suitable for 19" 100V power amplifier.

This device plays all of the well-established audio formats such as MP3, WMA, CD-R or CD-RW. Furthermore this DVD-player supports all standard operating functions, which can be found in premium CD/MP3-players. A serial remote control is included in the scope of delivery.

The multifunctional display provides continuous information via a progress-indicator, regarding the current replay status.

Please consider the following features:

- HDMI-, Cinch and USB 2.0 port
- Control panel on the front of the unit for control if the enclosed remote control is not at hand.
- Supported disc media: CD, CD-R / RW, DVD, DVD-R / RW, DVD + R / RW

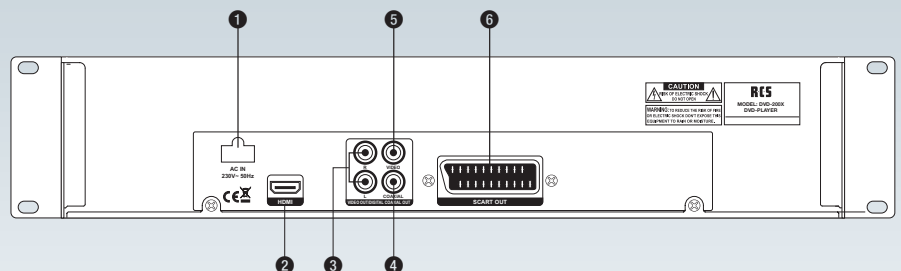
- USB input on the front panel for playback of multimedia contents of a USB stick.
- Supported file formats: MPEG1, MPEG2, MPEG4, JPEG, VCD, MP3, WMA, Audio CD, DIVX, Xvid

★

Technical data	DVD-200 X
Frequency range	20 – 20.000 Hz ±1dB
Distortion factor	< 0,1 %
Signal-to-noise ratio	> 85 dB
Audio output	Cinch L/R, Digital Audio Out Coaxial
Video output	HDMI; Scart (RGB); Video Out
Input	USB 2.0
Supported mediaformats	MPEG1, MPEG2, MPEG4, JPEG, VCD, MP3, WMA, Audio-CD, DIVX, Xvid
Power supply	230 V 50 Hz
Power Consumption	20 W (Standby < 3W)
Dimensions (WxHxD)	483 x 88 x 370; 2 RU
weight	approx. 4,5 kg

### Rear view

- 1 230V AC 50 Hz
- 2 HDMI port
- 3 Audio OUT Cinch L/R
- 4 Digital Audio Out: Coaxial
- 5 Video Out: Composite Video
- 6 Scart (RGB) output



### Model designation

19" DVD-Player, (2 RU) ..... DVD-200 X



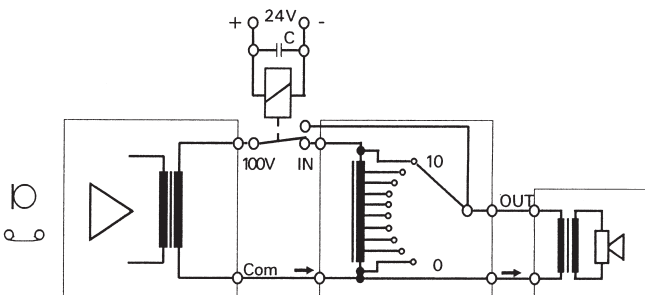
## Description

These volume control panels have been designed as 19" rackmount units. Using 6 100V-transformers, they provide central control for up to 6 speakers or speaker groups. Each control has 11 steps (10 control steps and 1 zero position). The first 7 steps provide an attenuation of 3dB each, and the last two steps provide an attenuation of 6dB each. Therefore, the maximum overall attenuation is -33dB.

Please consider the following features:

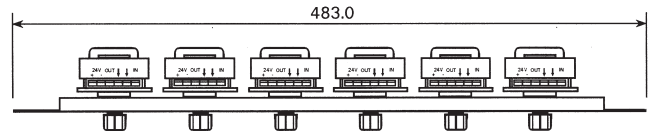
- Three models are available with 6 x 30 W, 6 x 60 W and 6 x 120 W.
- The individual controls with 100V-transformer are mounted on a stable 19" panel (extruded aluminium). The speaker volume control panels are suitable for installation in 19" racks.
- The speaker volume control panels are suitable for installation in 19" racks.
- Additionally, 6 priority override relays (24 V) are provided. They ensure that emergency announcements can be made, even if the respective control is in the zero position.
- The individual control knobs are robust and can be operated easily.
- Screw-type terminal strips facilitate wiring.

## Schematic diagram



- The 100V matching transformers have an excellent efficiency and frequency ranges between 50 Hz in the bass range and 18000 Hz in the treble range.

## Top view



★

Technical data	LR-6030	LR-6060	LR-6120
Control power (100V)	6 x 30 W	6 x 60 W	6 x 120 W
Priority override relays	6 St. (24 V)		
Control steps	10 + 0 position		
Control type	100V-transformer		
Dimensions (WxHxD)	483 x 88 x 68 mm, 2 RU		
Colour	black		
Weight	approx. 1,9 kg	approx. 2,2 kg	approx. 2,5 kg

## Model designations

- 19"-Speaker Control Panel, (2 RU) ..... **LR-6030A**
- 19"-Speaker Control Panel, (2 RU) ..... **LR-6060A**
- 19"-Speaker Control Panel, (2 RU) ..... **LR-6120A**



Technical data	ATT-100
Frequency	15 –30.000 Hz
Input impedance	20 kohms
Output impedance	200 ohms
Dimensions (WxHxD)	119 x 65 x 60 mm
Weight	0,5 kg

### Description

This ATT-100 is connected at the backside of a 100V PA centre (e.g. VLA-240C or VLZ-6600A). The device can be mounted directly to the rear of the PA centre.

The 100V-signal of the amplifier will be transferred via the ATT-100 into a LINE-signal. It will be possible to cascade the output lines 1 to 5.

Please consider the following features:

- Conversion of 100V-signal into a LINE-signal at 5 lines.
- Direct mounting to the backside of the PA centre.

### Model designation

**Line-Output-Attenuator, 5-fold** for VLA- / VLZ-Series. **ATT-100**



Technical data	ESU-002A
Switching voltage (100V / AC relay)	Relay energized: min. 16,8V DC, max. 30V DC Relay dropped: min. 0V DC, 4,8V DC
Switching current	8 A AC per switching contact (mains relay)
Switching voltage	250V DC per switching contact (mains relay)
Switching capacity	500W (100V-Relais)
Wire cross section per clamp contact	0,08 mm <sup>2</sup> ; 2,5 mm <sup>2</sup> (without ferrule); 0,25 mm <sup>2</sup> ; 1,5 mm <sup>2</sup> (with ferrule)
Stripping length connection wires	5,6 mm
Dimensions (wxhxd)	85 x 85 x 50 mm

### Description

The very compact one ESU-002A emergency switchover unit can handle two independent switching functions.

The switching of 100V speaker lines from by self-program receiving to priority receiving is possible. Simultaneously the shutdown of two separate 230V power supply is conducted if priority is received. The case is compliant to the protection standard IP 66.

- Priority relay module for 100V signals and 230V mains voltage.
- Passing the 100V signal of the alarm system to the sublet amplifier equipment.
- Make a connection of the loudspeaker in sublet areas in case of alarm.
- Disconnection of the sublet amplifier equipment.

★

### Model designation

**Emergency Switchover Unit, (IP66)** ..... **ESU-002A**

## PICTOGRAM DESCRIPTION



Speaker chassis and transformer moisture proof impregnated



With Emergency Call relay



Also available with 20-ohm speaker



British Standard 5839 Part 8 (Fire Protection provision) available.



Equipped with a fire-proof steel-pot



Impact-proof certified



Impact-proof certified optional



Impact-proof available optional



Speaker is impact-proof designed



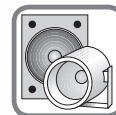
Suitable for outdoor installation



Special lacquer in all RAL colors possible, Price on request.

### Speaker

»100V, Active, Passive«



8

Part 8

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### Voice Evacuation Speaker



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### A/B Alarming Speaker



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### Cabinet Speakers



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### Ceiling- and Installation Speaker



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### Special Speakers



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### »PRO-SOUND« Speaker



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### Speaker Accessories



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100V

2x **6W** Adaptions  
1,5 / 3 / 6 W



Certificate-No.  
1438-CPR-0475



## Description

**This loudspeaker is tested by a notified product certification authority and certified to EN 54-24:2008.**

This built-in loudspeaker made of plastic-coated metal has, like all our EN 54-24 loudspeakers, been specially developed and optimized for voice alarm systems. Equipped with a broadband speaker, it is ideal for voice announcements and background music with very good sound quality in buildings.

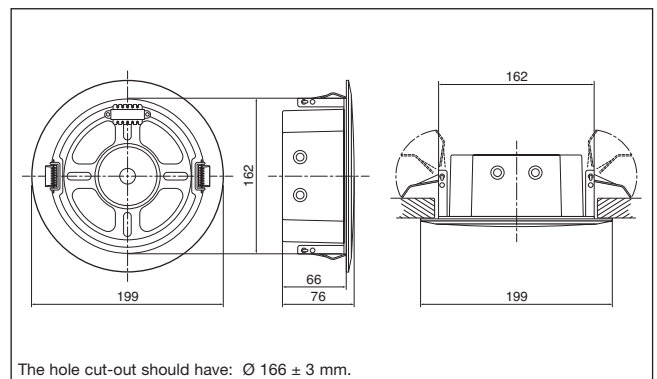
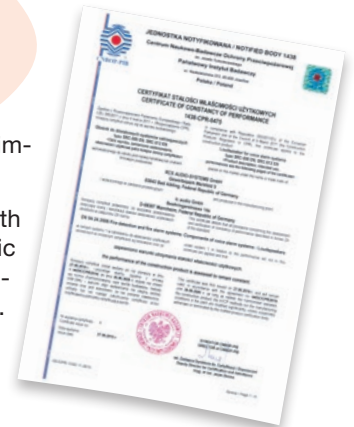
Regarding the rear plastic cover and the flat design, this speaker is suitable for installations with low installation depth.

Please consider the following features:

- 165 mm broadband speaker for best voice and music reproduction
- Fast and uncomplicated assembling with spring clamps and short tension distance
- The simple, modern mounting method adapts to all standard ceiling thicknesses of 3 - 45 mm.
- 4-pin ceramic terminal and thermal fuse

Technical data	SRC-606 EN
Nominal load capacity (music load cap.)	6 (15) W
Adjustments at 100 V	6-3-1,5 W
Frequency range	70 – 23.500 Hz
Sound pressure 1 W/1 m	100,2 dB
Sound pressure Pmax/4 m	95,9 dB
Sensitivity 1 W/4 m, EN54-24	85,8 dB
Beam angle -6dB 1/2/4 kHz	180° /135°/60°
Hole cut-out Ø	166 mm
Outside dimensions x installation depth	199 mm x 76 mm
Weight, colour	0,7 kg; white (similar to RAL 9010)

- Temperature resistance of -10/+55° C
- Protection class IP21C
- Speaker with moisture impregnation.
- The speaker comes with an innovative anti-static PET plastic contact protection (plastic cover).



## Model designation

**Alarming Ceiling-Speaker** ..... **SRC-606 EN**  
6 W, with 100V-transformer and dust cover

# VOICE EVACUATION CEILING SPEAKER

EN 54-24 CERTIFIED

# RCS



**6W** Adaptions  
1,5 / 3 / 6 W

**100 V**



PASSI

ACTIVE

**Certificate-No.**  
1438-CPR-0475



## Description

**This loudspeaker is tested by a notified product certification authority and certified to EN 54-24:2008.**

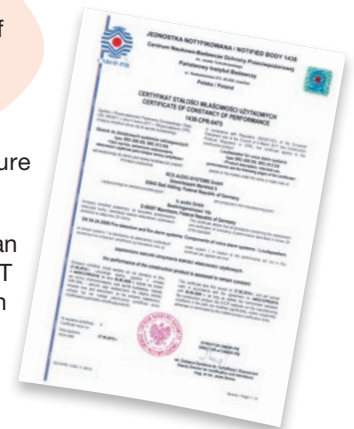
This built-in loudspeaker made of plastic-coated metal is equipped with 2 loudspeakers as well as with 2 transformers and thus allows in a space-saving and elegant way an A / B distribution and cabling of the required alarm loudspeaker according to **DIN EN 50849 / VDE-0828 and VDE-0833-4**.

Regarding the rear plastic cover and the flat design, this speaker is suitable for installations with low installation depth.

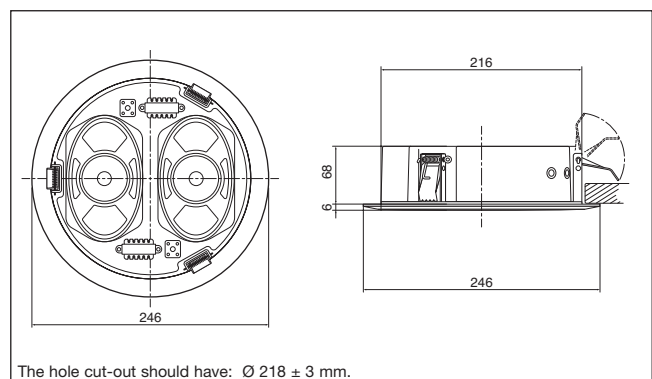
Please consider the following features:

- 2 strong broadband speakers for best voice and music reproduction.
- Fast and uncomplicated assembly with spring clamps and short tension distance
- The simple, modern mounting method adapts to all standard ceiling thicknesses of 3 - 45 mm.
- 2 pieces 2-pin ceramic terminal with thermal fuse.

- Temperature resistance of -20/+55° C
- Protection class IP21C
- Speaker with moisture impregnation
- The speaker comes with an innovative anti-static PET plastic contact protection (plastic cover).



Technical data	SRC-612 EN
Nominal load capacity (music load cap.)	2 x 6 (15) W
Adjustments at 100 V	2 x 6-3-1,5 W
Frequency range	101 – 22.900 Hz
Sound pressure 1 W/1 m	94,0 dB
Sound pressure Pmax/4 m	89,7 dB
Sensitivity 1 W/4 m, EN54-24	79,0 dB
Beam angle -6dB 1/2/4 kHz	180°/137°(v)/77°(h)/49°(v)22°(h)
Hole cut-out Ø	218 mm
Outside dimensions x installation depth	246 mm x 68 mm
Weight, colour	1,1 kg; white (similar to RAL 9010)



## Model designation

**Alarming Ceiling-Speaker** ..... **SRC-612 EN**  
2x 6 W, with 2x 100V-transformer and dust cover

100V

2x **6W** Adaptions  
1,5 / 3 / 6 W



Certificate-No.  
1438-CPR-0473



## Description

**This loudspeaker is tested by a notified product certification authority and certified to EN 54-24:2008.**

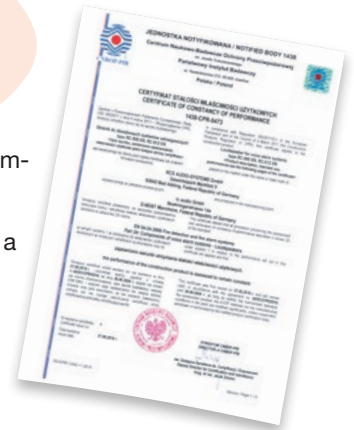
This built-in loudspeaker made of plastic-coated metal has, like all our EN 54-24 loudspeakers, been specially developed and optimized for voice alarm systems. Equipped with a broadband speaker, it is ideal for voice announcements and background music with very good sound quality in buildings.

The speaker has a fire pot and conforms to British Standard BS 5839, Part 8.

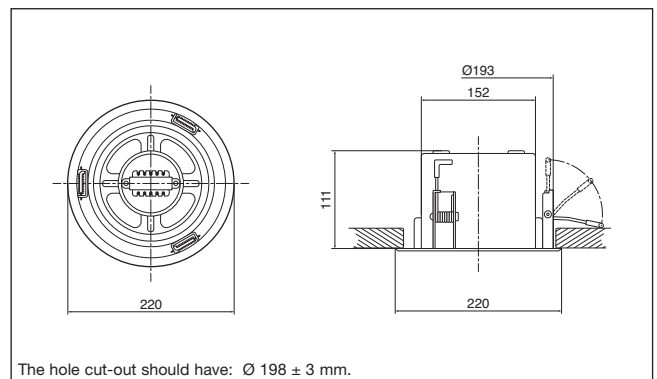
Please consider the following features:

- 165mm broadband speaker for best voice and music reproduction
- Plastic coated metal version
- Fast and uncomplicated assembly with spring clamps and short tension distance
- The simple, modern mounting method adapts to all standard ceiling thicknesses of 2 - 45 mm.
- 2-pin ceramic terminal and thermal fuse

- Temperature resistance of -20/+80° C
- Protection class IP21C
- Speaker with moisture impregnation.
- The speaker comes with a metal fire pot.



Technical data	RC-606 EN
Nominal load capacity (music load cap.)	6 (15) W
Adjustments at 100 V	6-3-1,5 W
Frequency range	80 - 24.000 Hz
Sound pressure 1 W/1 m	102,5 dB
Sound pressure Pmax/4 m	98,2 dB
Sensitivity 1 W/4 m, EN54-24	78,0 dB
Beam angle -6dB 1/2/4 kHz	180° /128°/55°
Hole cut-out Ø	198 mm
Outside dimensions x installation depth	220 mm x 112 mm
Weight, colour	1,3 kg; white (similar to RAL 9010)



The hole cut-out should have: Ø 198 ± 3 mm.

## Model designation

**Alarming Ceiling-Speaker** ..... **RC-606 EN**  
6 W, with 100V-transformer and dust cover

# VOICE EVACUATION CEILING SPEAKER

EN 54-24 CERTIFIED

# RC5



**6W** Adaptions  
1,5 / 3 / 6 W

**100 V**



PASSI

ACTIVE

Certificate-No.  
1438-CPR-0473



## Description

This loudspeaker is tested by a notified product certification authority and certified to EN 54-24:2008.

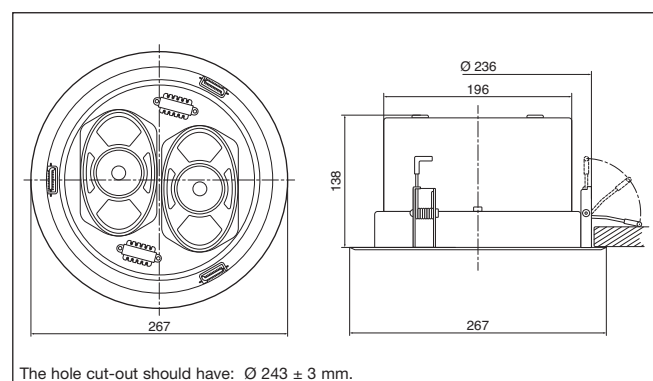
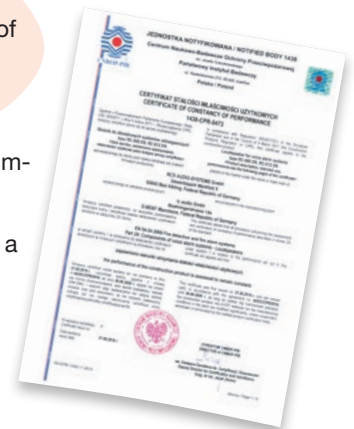
This built-in loudspeaker made of plastic-coated metal is equipped with 2 loudspeakers as well as with 2 transformers and thus allows in a space-saving and elegant way an A / B distribution and cabling of the required alarm loudspeaker according to DIN EN 50849 / VDE-0828 and VDE-0833-4.

The speaker has a fire pot and conforms to British Standard BS 5839, Part 8.

Please consider the following features:

- 2 strong broadband speakers for best voice and music reproduction
- Plastic coated metal version
- Fast and uncomplicated assembly with spring clamps and short tension distance
- The simple, modern mounting method adapts to all standard ceiling thicknesses of 10 - 45 mm.
- 2 pieces 2-pole ceramic terminals with thermal fuse

- Temperature resistance of -20/+80° C
- Protection class IP21C
- Speaker with moisture impregnation.
- The speaker comes with a metal fire pot.



Technical data	RC-612 EN
Nominal load capacity (music load cap.)	2 x 6 (15) W
Adjustments at 100 V	2 x 6-3-1,5 W
Frequency range	120 - 23.500 Hz
Sound pressure 1 W/1 m	104,8 dB
Sound pressure Pmax/4 m	100,5 dB
Sensitivity 1 W/4 m, EN54-24	80,8 dB
Beam angle -6dB 1/2/4 kHz	180°/70°(v)/80°(h)/32°(v)/41°(h)
Hole cut-out $\varnothing$	243 mm
Outside dimensions x installation depth	267 mm x 138 mm
Weight, colour	2,2 kg; white (similar to RAL 9010)

## Model designation

**Alarming Ceiling-Speaker** ..... **RC-612 EN**  
2x 6 W, with 2x 100V-transformer and fire-proof steel-pot

100V



**6W** Adaptions  
2x 1,5 / 3 / 6 W



Certificat No.  
1488-CPD-0181/W



## Description

**This loudspeaker is tested by a notified product certification authority and certified to EN 54-24:2008.**

This built-in loudspeaker is equipped with two speakers and two transformers. It allows an elegant and space saving way for the A/B wiring of the alerting loudspeakers according to **DIN IEC 60849/VDE 0828 and VDE 0833-4.**

Please consider the following features:

- The simple, modern mounting by quick-release fits into all common ceilings and wall thicknesses.
- The installation frame is made of high-quality plastic, the grille of coated steel. The construction is theft- proof and impact resistant (height of the rim: 2mm).
- 2 pieces high-power 4"x2,5" oval wide band chassis with high tone cone and 2 high quality transmitters enable a secure A/B wiring.
- Equipped with a dust cover as drip protection.
- The housing is made of impact, shock and fire resistant ABS plastic (UL94V0) and as an option available on all RAL colors on request.

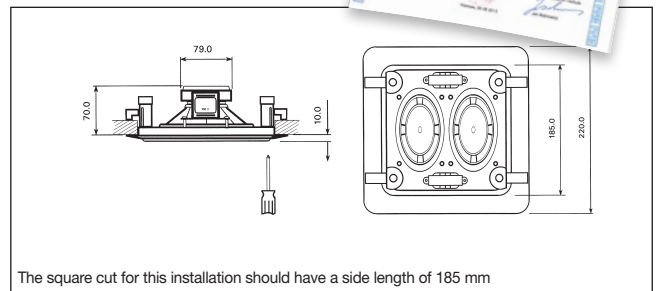
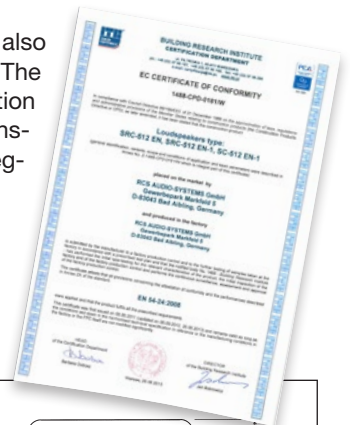


Installation case made of soaked chip-board for installation in ceilings or walls made of bricks, cement etc.  
Dimensions: 233 (H) x 233 (W) x 100 (D) in mm.

**Installation case** for SC-512 EN... **EZ-120**

- We offer this loudspeaker also as moisture proof version. The technical data is the option "FI-100" speaker and transformer is especially impregnated.

★



The square cut for this installation should have a side length of 185 mm

Technical data	SC-512 EN-1
Load rating (Music Power)	2x 6 W (15 W)
Adaptions at 100V	2x 6 W - 3 W - 1,5 W
Frequency range (±10dB)	90 – 16.000 Hz
Sound pressure at 1W/1m	95 dB
Sound pressure SPL Pmax/1m	111,2 dB @182kHz
Angle of refl. beam 1kHz -6dB	180°
Speaker and Impedance	2 St. 4"x2,5", 8 ohms
Hole cut-out	185 x 185 mm, ±5 mm
Dimensions; Installation depth	220 x 220 mm / 70 mm
Weight, Color	1,3 kg, white

## Model designation

**Alarming Ceiling Speaker**..... **SC-512 EN-1**  
2x 6 W, with 2x 100V-transformer, white

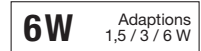
# VOICE EVACUATION CEILING SPEAKER

EN 54-24 CERTIFIED

# RCS



100 V



PASSIVE

ACTIVE



Certificat No.  
1488-CPD-0181/W



## Description

This loudspeaker is tested by a notified product certification authority and certified to EN 54-24:2008.

In terms of safety and simplicity this loudspeaker sets new standards. It is equipped with the most modern and easiest mounting, a quick release closure.

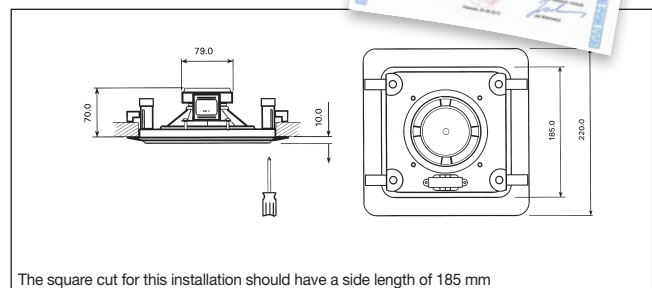
The assembly / disassembly is carried out by tighten 4 screws which are accessible after lifting the perforated plate. The installation frame is made of high quality plastic parts; the grille is made of coated steel. The construction is theft proof.

Please consider the following features:

- The understated, modern design with a rim thickness of only 2mm is especially preferred by architects.
- Optimum sound for voice alarming and appropriate attention/alarm signals.
- Equipped with a dust cover as drip protection.
- The housing is made of impact, shock and fire resistant ABS plastic and as an option available on all RAL colors on request.

- We offer this loudspeaker also as moisture proof version. The technical data is the option "FI-100" speaker and transformer is especially impregnated.

★



The square cut for this installation should have a side length of 185 mm

Technical data	SC-106 EN-1
Load rating (Music Power)	6 W (15 W)
Adaptions at 100V	6 W - 3 W - 1,5 W
Frequency range (±10dB)	90 - 16.500 Hz
Sound pressure at 1W/1m	91 dB
Sound pressure SPL Pmax/1m	101 dB
Angle of refl. beam 1kHz -6dB	180° horizontal / 175° vertical
Speaker and Impedance	4"x2,5", 8 ohms
Hole cut-out	185 x 185 mm, ±5 mm
Dimensions; Installation depth	220 x 220 mm / 70 mm
Weight, Color	1,1 kg, white

## Model designation

Alarming Ceiling Speaker.....**SC-106 EN-1**  
6 W, 100V-transformer, white



Installation case made of soaked chipboard for installation in ceilings or walls made of bricks, cement etc.  
Dimensions: 233 (H) x 233 (W) x 100 (D) in mm.

Installation case for SC-106 EN-1 .. **EZ-120**

100V

in 2 power classes  
**6 W – 10 W**



Certificat No.  
**1488-CPD-0320/W**



Under fire  
regulation



## Description

**This loudspeaker is tested by a notified product certification authority and certified to EN 54-24:2008.**

This built-in speaker with U-shaped mounting bracket and metal mounting frame is designed specifically for voice alarm systems.

This speaker series fulfilled the requirements of **EN 54-24** and **British standard BS 5839**.

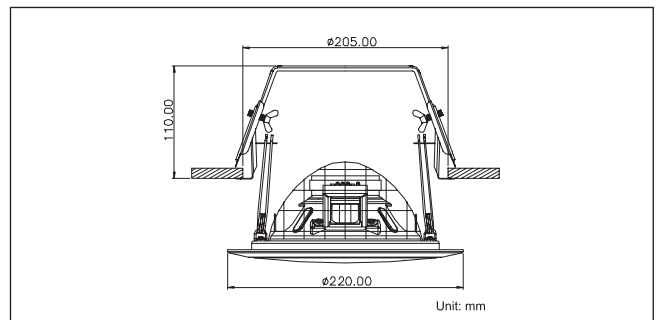
Please consider the following features:

- This loudspeaker is supplied with a steel mounting bracket in U-shape.
- Optimum sound for voice alarming and appropriate attention/alarm signals.
- Equipped with fire-resistant stranded wires, thermal fuse, ceramic terminal and a dust cover as drip protection.
- Fast installation due spring clamps Quick-Mount-System.

- The mounting frame and the grille are made of coated steel provided in a modern, understated design.
- The housing is made of steel and as an option available on all RAL colors on request.
- The optimized pricing makes this ceiling speakers are economically and interesting.



Technical data	CS-6106 EN	CS-6110 EN
Load rating (Music Power)	6 (15) W	10 (15) W
Adaptions at 100V	6W - 3W - 1,5 W	10W - 5W - 2,5 W
Frequency range (±10dB)	80 – 20.000 Hz	
Sound pressure 1 W/1 m	90 dB	93 dB
Sound pressure SPL Pmax/1 m	97 dB	103 dB
Angle of refl. beam 1kHz	120°	
Speaker and Impedance	165 mm / 8 ohms	
Hole cut-out Ø	205 mm ±3 mm	205 mm ±3 mm
Dimensions Ø, Install. depth	220 mm / 120 mm	220 mm / 120 mm
Weight, Colour	1,1 kg; white	1,2 kg; white



## Model designations

**Alarming Ceiling Speaker** ..... **CS-6106 EN**  
6 W, with 100V-transformer, white, metal

**Alarming Ceiling Speaker** ..... **CS-6110 EN**  
10 W, with 100V-transformer, white, metal

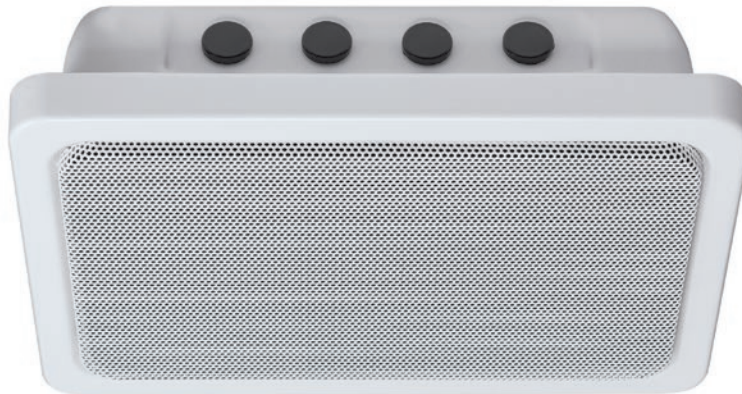
# VOICE EVACUATION CEILING SPEAKER

EN 54-24 CERTIFIED

# RCS



**6W** Adaptions 1,5 / 3 / 6 W  
**2x 6W** Adaptions 1,5 / 3 / 6 W  
 with Broadbandchassis



Certificate-No.  
 1438-CPR-0413  
 1438-CPR-0415



100 V

PASSIVE

ACTIVE

## Description

**This loudspeaker is tested by a notified product certification authority and certified to EN 54-24:2008.**

The ABT-W6 cabinet loudspeaker has a robust and attractively designed metal housing.

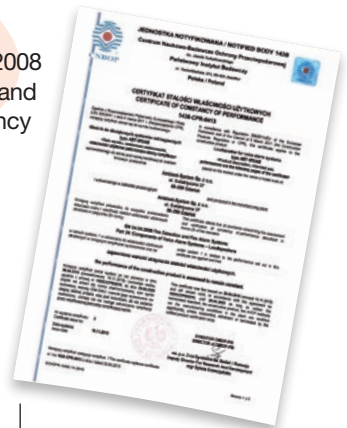
The speaker can be used for on wall mounting or in wall mounting. It is equipped with a high-quality broadband chassis and is particularly well suited for music and voice reproduction in 100 V loudspeaker systems. The modern and discreet design is judged by architects to be particularly positive.

This loudspeaker series meets the requirements of **EN 54-24** and **British Standard BS 5839**.

Please consider the following features:

- Suitable for surface and flush mounting.
- Robust, powder-coated metal housing, which ensures the best drone and vibration-free.
- Broadband, high-performance speaker chassis with good speech and music intelligibility.

- Certified to EN 54-24: 2008 for voice alarm systems and electroacoustic emergency warning systems..

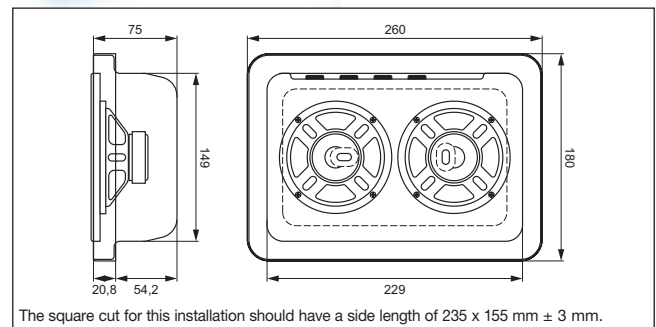


Back view



The speaker can be mounted horizontally or vertically.

When used as a built-in speaker, a ceiling cut-out of 235 x 155 ± 3 mm is required. The minimum installation depth is 55 mm.



Technical data	ABT-W6	ABT-W6 AB
Load rating (Music Power)	6 (15) W	2x 6 (15) W
Adaptions at 100V	6/3/1,5/0,75 W	2x 6/3/1,5/0,75 W
Frequency range (±10dB)	120 - 20.000 Hz	150 - 20.000 Hz
Sound pressure 1 W/1 m	80 dB	84 dB
Sound pressure SPL Pmax/1 m	84 dB	91 dB
Angle of refl. beam 1kHz	180°	165°
Speaker and Impedance	5" Broadband; 8 ohms	2x 5" Broadband; 8 ohms
Hole cut-out Ø	235 x 155 mm; 55 mm	
Dimensions Ø, Install. depth	180 x 260 x 80 mm	
Weight, Colour	2,3 kg; white (RAL 9003)	2,8 kg; white (RAL 9003)

## Model designations

**Voice Evacuation Ceiling Speaker**..... **ABT-W6**  
 6 W, with 100V-transformer, white, metal

**Voice Evacuation Ceiling Speaker**..... **ABT-W6 AB**  
 2x 6 W, with 100V-transformer, white, metal

100V



Certificat No.  
1488-CPD-0179/W

PASSIVE  
ACTIVE



### Description

**This loudspeaker is tested by a notified product certification authority and certified to EN 54-24:2008.**

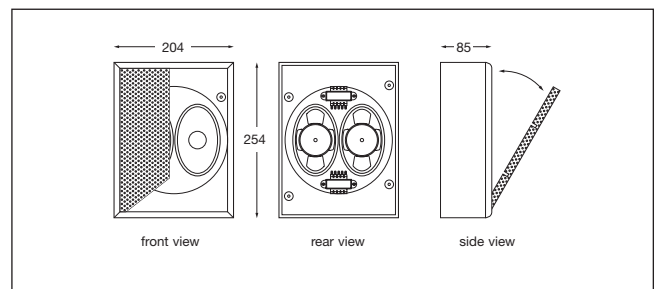
This built-in loudspeaker is equipped with two speakers and two transformers. It allows an elegant and space saving way for the A/B wiring of the alerting loudspeakers according to **DIN IEC 60849/VDE 0828 and VDE 0833-4.**

Please consider the following features:

- The plastic housing made of flame-retardant plastic to UL-94 ensures boom and swing release.
- Two powerful 4"x2,5" oval full range speaker with tweeter cone and two high quality transformers provide a safe A/B wiring.
- The fixing is burgle proof and can be mounted horizontally, vertically on wall or ceiling.

- Optimal sound quality for voice alarm announcements and corresponding attention and alarm signals.

★



Technical data	BC-512 EN
Load rating (program)	2x 6 (15) W
Transformer tapings at 100V	2x 6 W - 3 W - 1,5 W
Frequency range (±10dB)	90 - 17.000 Hz
Sound pressure at 1 W/1 m	92 dB
Sound pressure SPL Pmax/1 m	102 dB
Angle of refl. beam 1kHz	175° horizontal / 180° vertical
Speaker and impedance	2 St. 4"x2,5" / 8 ohms
Dimensions, HxWxD	254 x 204 x 85 mm
Weight	2,2 kg
Colour corpus / grille	alpine white/white

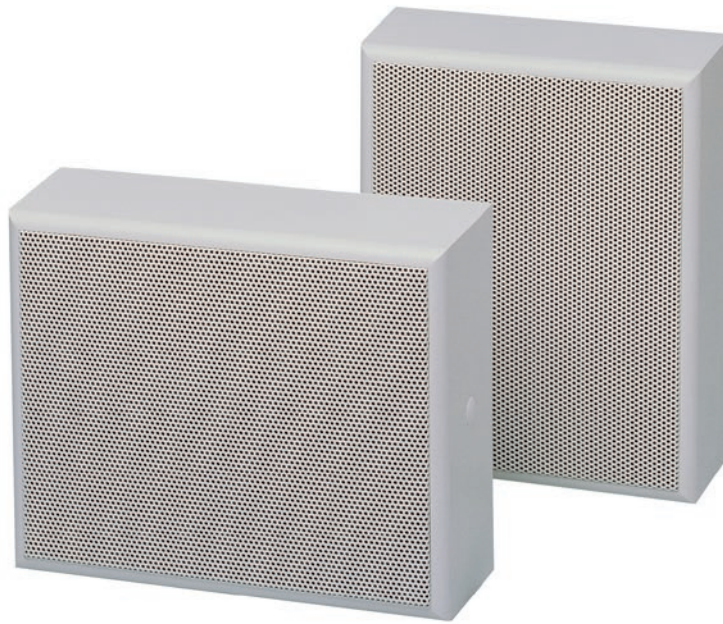
### Model designation

**Alarming Cabinet-Speaker** ..... **BC-512 EN**  
2x 6 W, with 2x 100V-transformer, white

# VOICE EVACUATION CABINET SPEAKER

EN 54-24 CERTIFIED

# RCS



Certificate No.  
1488-CPD-0186/W

100 V

PASSIVE

ACTIVE

## Description

**This loudspeaker is tested by a notified product certification authority and certified to EN 54-24:2008.**

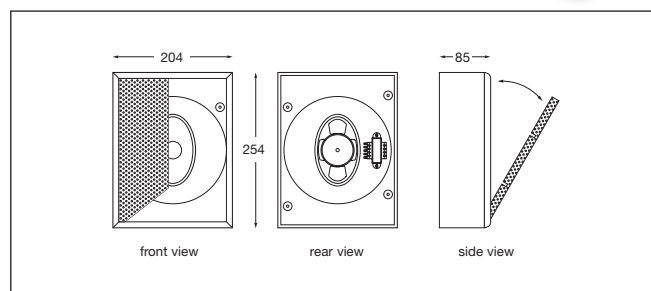
These cabinet speakers have been developed according to the latest knowledge in plastic technology. The acoustic issue took special attention. This gives them optimum sound for voice evacuation announcements and appropriate attention and alarm signals.

Please consider the following features:

- The plastic housing made of flame-retardant plastic to UL-94 ensures boom and swing release.
- Broadband high performance speaker chassis with an integrated high tone cone.
- The design of the soft line corpus is understated and modern. Especially architects judge him as positive.

- The fixing is burgle proof and can be mounted horizontally, vertically on wall or ceiling.

★



Technical data	BC-106 EN
Load rating (program)	6 W (15 W)
Transformer tapplings at 100V	6 / 3 / 1,5 W
Frequency range (±10dB)	120 – 17.000 Hz
Sound pressure at 1 W/1 m	87 dB
Sound pressure SPL Pmax/1 m	95 dB
Angle of refl. beam 1kHz	175° horizontal / 160° vertical
Speaker and impedance	4"x2,5", 8 ohms
Dimensions, HxWxD	254 x 204 x 85 mm
Weight	1,5 kg
Colour corpus / grille	alpine white/white

## Model designation

**Alarming Cabinet-Speaker** ..... **BC-106 EN**  
6 W, with 100V-transformer, white

100V



Certificat No.  
1438-CPD-0228

Under fire  
regulation



**6 W** Adaptions  
1,5 / 3 / 6 W

**2x 6W** Adaptions  
1,5 / 3 / 6 W

broadband chassis



## Description CS-601 BS

This loudspeaker is tested by a notified product certification authority and certified to EN 54-24:2008.

The ceiling and wall construction speakers of the CS series present themselves in a new, responding optic. The form adapts outstandingly to almost all premises.

Particularly in buildings, in which a suspended ceiling is not intended, the complete metal speaker is the solution. Of course it can be used due to its method of construction also as wall speakers.

This speaker series fulfilled the requirements of EN 54-24 and British standard BS 5839.

Please consider the following features:

- Speaker in complete metal execution.
- 6 1/2" broadband chassis for excellent speech and music reproduction.
- Simple assembling.
- With Ceramic terminals and thermal fuse.

★

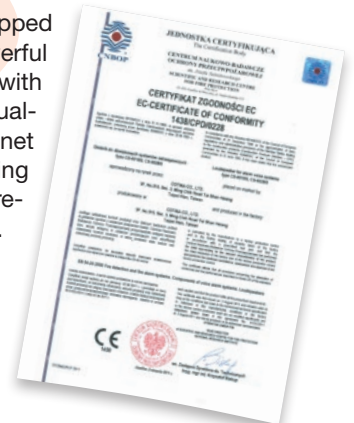
Technical data	CS-601 BS
Speaker	6 1/2" full range, dual cone
Load rating (program)	6 (15) W
Power Rating (100V)	6 / 3 / 1,5 W
Freq. Response(-10dB)	155 - 20.000 Hz
Sound Pressure Level	94 dB (at 1W/1m)
Maximum Acoustic Pressure	101 dB (at 6W/1m)
Angle of refl. beam (-6dB, 1/4/8 kHz)	100°/90°/25°
Standards	EN54-24 , BS5839 part 8
Dimensions	Ø 277 x 90 (H) mm
Material, Color	Steel, white
Weight	1,45 kg

Alarming Ceiling Speaker, 6 W ..... **CS-601 BS**  
with 100V-transformer, white

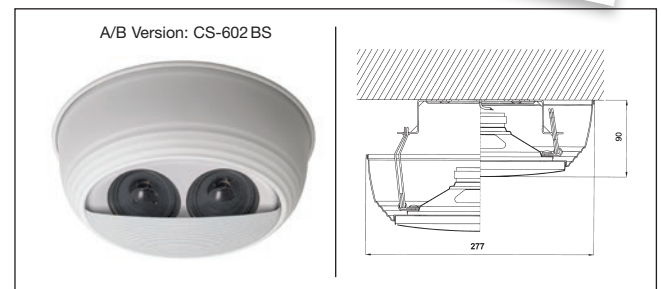
## Description CS-602 BS

The model CS-602 BS is equivalent to the model CS-601 BS in design, structural shape and mounting method.

But this ceiling speaker is equipped in addition with two powerful 5"x3" oval full range speaker with tweeter cone and two high quality transformers. This cabinet speaker enables space-saving A/B division and wiring of the required alarming loudspeakers.



★



Technical data	CS-602 BS
Speaker	2x 5x3" full range, dual cone
Load rating (program)	2x 6 (15) W
Power Rating (100V)	6W-3W-1.5W
Freq. Response(-10dB)	180 - 20.000 Hz
Sound Pressure Level	88 dB
Maximum Acoustic Pressure	95 dB
Angle of refl. beam (-6dB, 1/4/8 kHz)	180°/140°/80°
Compliant Standard	EN54-24 , BS5839 part 8
Dimensions	Ø 277 x 90 (H) mm
Material, Color	Steel, white
Weight	1,7 kg

Alarming Ceiling Speaker, 2x 6 W ..... **CS-602 BS**  
with 2x 100V-transformer, white

# VOICE EVACUATION CABINET SPEAKER

EN 54-24 CERTIFIED

# RCS



**30W** Adaptions 30/15/7,5/3,25W  
2-Way-System

100 V



PASSIVE

ACTIVE

Certificat No. 1488-CPD-0313/W



## Description

This loudspeaker is tested by a notified product certification authority and certified to EN 54-24:2008.

This professional cabinet speaker is suitable for voice alarm systems. It includes a 2-way bass reflex system from full-range woofer and a dome-tweeter. The housing is very acoustically and professionally designed

This speaker series fulfilled the requirements of EN 54-24 and British standard BS 5839.

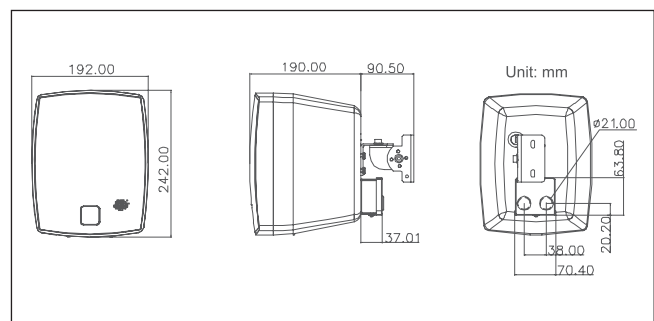
Please consider the following features:

- Due to the trapezoidal shape of the housing mounting in corners or angles is easily possible. Just as well the design is also suitable as monitor speaker.
- The swing and inclinable bracket is included in the delivery.
- On the rear of the unit there is the impedance selector which allows 4x 100 taps and 8 ohm position plus deactivation of the speaker.
- The fitted 100V-transformer avoids any loss of sound pressure and playback quality.

- Equipped with a ceramic terminal and a metallic cable cover complies with the requirements of BS speakers de 5839.



Technical data	CT-552WTBS
Load rating (program)	30 W (50 W)
Transformer tapplings at 100V	30 / 15 / 7,5 / 3,75 W
Frequency range (±10dB)	80 Hz – 20 KHz
Sound pressure at 1 W/1 m	89 dB
Sound pressure SPL Pmax/1 m	104 dB
Angle of refl. beam 1kHz	120° vertical / 60° horizontal
Speaker Ø and impedance	Woofer: 5"; Tweeter: 89 x 64 mm / 8 Ω
Dimensions, HxWxD	242 x 192 x 190 mm
Material	ABS-plastic UL94V0; sheet steel
Weight and Colour	approx. 2,5 kg, white



## Model designation

**Alarming Ceiling Speaker, 30W** ..... **CT-552WTBS**  
2 way, with 100V-transformer, white

100V

**20 W** Adaptions  
20 / 10 / 5 W  
broadband chassis



Certificat No.  
1438-CPD-0240



### Description

**This alarming double direction speaker is tested by a notified product certification authority and certified to EN 54-24:2008.**

This sound projector series fulfilled the requirements **EN 54-24** and **British standard BS 5839**.

The loudspeaker is equipped with a two high-quality and very broadband twin cone speakers. The integrated 100V-transformer has the adjustments to 20 W – 10 W and 5 W.

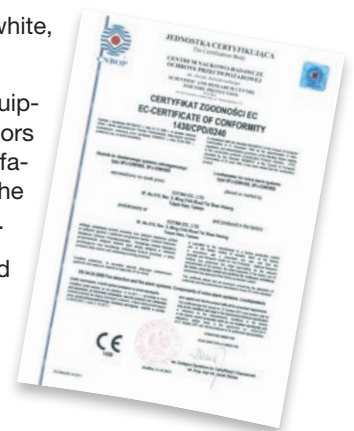
Due to the excellent sound quality and dynamics, this sound projector is ideally suited for language reproduction as well as for a very good music performance.

This speaker is ideal for use in corridors, halls and underground garages. It is weatherproof certified for outdoor (Type B).

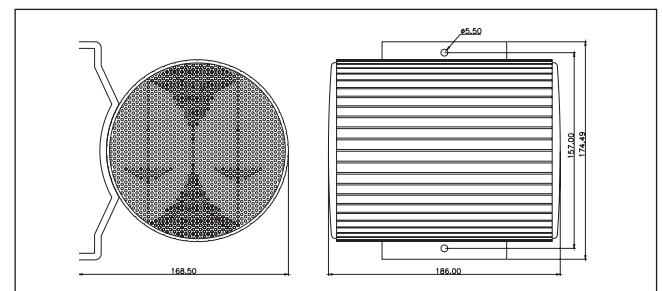
Two cable inlets for in / out allow looping to the next speaker.

Please consider the following features:

- The loudspeaker is in all-metal version.
- The color of the cover is white, similar to RAL 9010.
- The form and interior equipment of the sound projectors is configured, so that the favored polar pattern of the sound radiation is ensured.
- With ceramic terminals and thermal fuse.



Technical data	SPJ-52 WHBS
Load rating (Music Power)	20 W (35 W)
Adaptions at 100V	20 / 10 / 5 W
Frequency range (±10dB)	120 – 20.000 Hz
Sound pressure 1 W/1 m	89 dB
Sound pressure SPL Pmax	101 dB
Angle of refl. beam (-6dB, 1 kHz/4 kHz)	130°/50°
Speaker Ø / Impedance	5", 8 ohms (2x)
Dimensions (without bracket)	Ø 140 x 207 mm
Material, Colour	Aluminium, white (RAL 9010)
Weight	approx. 3,3 kg



### Model designation

**Double direction speaker.....SPJ-52 WHBS**  
20 W, with 100V-transformer, white

# VOICE EVACUATION PROJECTOR SPEAKER

EN 54-24 CERTIFIED

# RCS



**20 W** Adaptions 20 / 10 / 5 W  
broadband chassis

100 V

PASSI

ACTIVE



Certificat No.  
1438-CPD-0240



## Description

This alarming Sound-Projector speaker is tested by a notified product certification authority and certified to EN 54-24:2008.

This sound projector series fulfilled the requirements EN 54-24 and British standard BS 5839.

The loudspeaker is equipped with a two high-quality and very broadband twin cone speakers. The integrated 100 V transformer has the adjustments to 20 W – 10 W and 5 W.

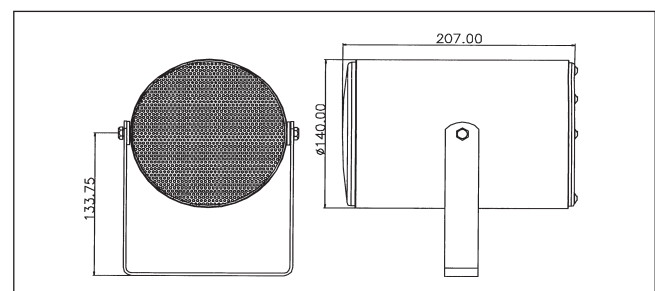
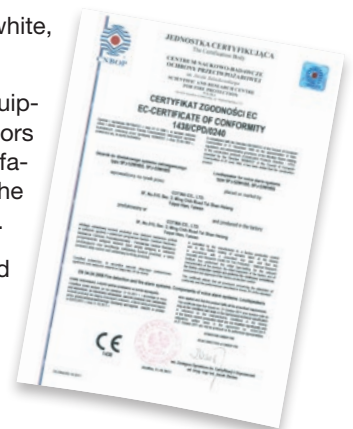
Due to the excellent sound quality and dynamics, this sound projector is ideally suited for language reproduction as well as for a very good music performance.

This speaker is ideal for use in corridors, halls and underground garages. It is weatherproof certified for outdoor (Type B).

Two cable inlets for in / out allow looping to the next speaker.

Please consider the following features:

- The loudspeaker is in all-metal version.
- The color of the cover is white, similar to RAL 9010.
- The form and interior equipment of the sound projectors is configured, so that the favored polar pattern of the sound radiation is ensured.
- With ceramic terminals and thermal fuse.



Technical data	SPJ-53 WHBS
Load rating (Music Power)	20 W (35 W)
Adaptions at 100V	20 / 10 / 5 W
Frequency range (±10dB)	130 – 20.000 Hz
Sound pressure 1 W/1 m	91 dB
Sound pressure SPL Pmax	103 dB
Angle of refl. beam (-6dB, 1/4/8 kHz)	280°/55°/60°
Speaker Ø / Impedance	5", 8 ohms
Dimensions (without bracket)	Ø 140 x 207 mm
Material, Colour	Steek, white (RAL 9010)
Weight	approx. 2,5 kg

## Model designation

Alarming Sound Projector ..... **SPJ-53 WHBS**  
20 W, with 100V-transformer, white

100V

**60W** Adaptions  
60-30-15-7,5W  
2-Way-System



Certificat No.  
1488-CPD-0315/W



### Description

**This loudspeaker is tested by a notified product certification authority and certified to EN 54-24:2008.**

This music horn speaker series fulfilled the requirements of EN 54-24 and British standard BS 5839.

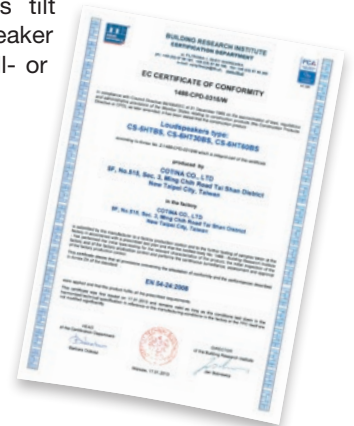
The new music horn CS-6HT60WHBS combines sound pressure and weatherproof of horn speaker with excellent sound of 2-way-system. It is particularly suitable for applications, where apart from speech also a high quality music performance is required.

The weatherproof construction (protection type IP-66) allows the permanent use outdoors. Therefore the range of application possibilities is greatly extended.

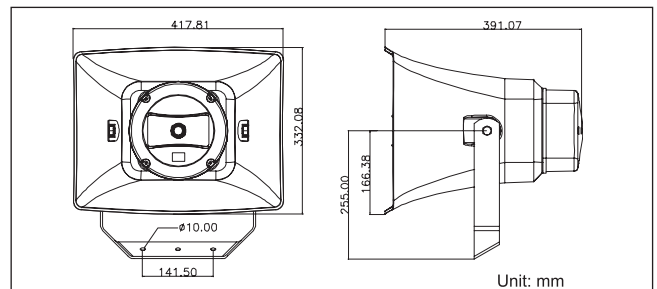
Please consider the following features:

- The housing is made of impact proof ABS-plastic and can be painted in all RAL colors on option.
- 100V-transformers are used, enabling various tapping's

- Equipped with a ceramic terminal and a metallic cable cover complies with the requirements of BS speakers de 5839.
- The music horn contains two separate driver units, one for the low and one for the high frequency range.
- The mounting bracket is tilt able so the music horn speaker is optimally suited for wall- or ceiling mounting.



Technical data	CS-6HT60 BS
Load rating (Music Power)	60 W (90 W)
Base impedance	8 ohms
Adaptions at 100V	60 - 30 / 15 / 7,5 W
Frequency range (±10dB)	100 - 20.000 Hz
Sound pressure 1 W/1 m	97 dB
Sound pressure SPL Pmax/1 m	115 dB
Angle of refl. beam (1 kHz)	60°
Protection Type DIN 40050	IP 66
Dimensions (without bracket)	330 x 430 x 415 mm
Material, Colour	ABS-plastic UL94V0, light grey (RAL-7035)
Weight	7,05 kg



### Model designation

**Alarming Music Horn, 60W..... CS-6HT60 BS**  
20 W, with 100V-transformer, light grey

# VOICE EVACUATION HORN SPEAKER

EN 54-24 CERTIFIED

# RCS



**30W** Adaptions 30/15/7,5/3,25W

**100V**



Certificat No. 1488-CPD-0314/W



## Description

This loudspeaker is tested by a notified product certification authority and certified to EN 54-24:2008.

This alarming horn speaker fulfilled the requirements of EN 54-24 and British standard BS 5839.

The horn speaker has a very wide frequency range, which combined with the high sound pressure even with long distances for optimum speech intelligibility

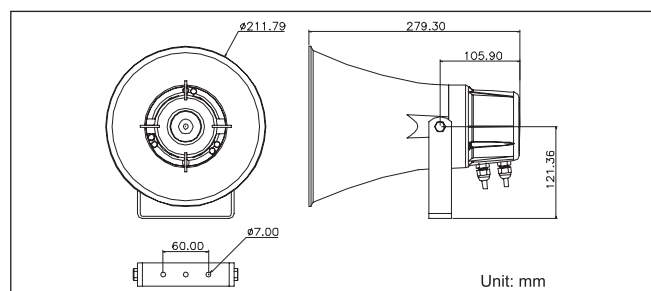
The flame-resistant housing is made of impact- and weather-resistant ABS plastic UL94 in the color light gray RAL 9035. The mounting bracket and screws are made of weatherproof stainless steel V2A

The water-resistant design with 2 G-gland allows the loop through to the next speaker without an additional connection cable.

Please consider the following features:

- High reliability due to protection class IP66.
- Easy installation by fully reversible U-mounting bracket.

- There are 4 adaptions in 100V operating available.
- Equipped with a ceramic terminal and a metallic cable cover complies with the requirements of BS speakers de 5839.



Technical data	PHS-81T30 BS
Load rating (Music Power)	30 W (40 W)
Base impedance	8 ohms
Adaptions at 100V	30 / 15 / 7,5 / 3,25 W
Frequency range (±10dB)	340 – 9.000 Hz
Sound pressure 1 W/1 m	108 dB
Protection Type DIN 40050	IP 66
Dimensions (without bracket)	Ø 212 x 280 mm
Material, Colour	ABS-plastic UL94V0, light grey (RAL-7035)
Weight	approx. 2,05 kg

## Model designation

**Alarming Horn Speaker** ..... **PHS-81T30 BS**  
30 W, with 100V-transformer, white

100V



2 power classes  
2x 6 W – 2x 10 W  
sine



## Description

This ceiling speaker is equipped with 2 loudspeakers as well as with 2 transformers. This cabinet speaker enables space-saving A/B division and wiring of the required alarming loudspeakers through **DIN IEC 60849/VDE 0828**.

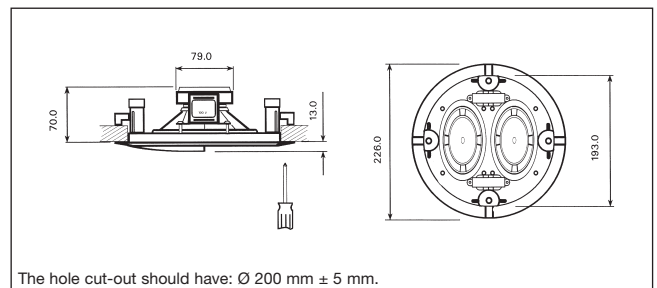
Please consider the following features:

- The high impact-resistant plastic housing ensures best boom and swing release.
- Two powerful 4"x 2,5" oval full range speaker with tweeter cone and two high quality transformers provide a safe A/B wiring.
- The fixing is burgle proof and can be mounted horizontally, vertically on wall or ceiling.
- In this series of speaker we also offer a moisture proof version. The technical data is the option „FI-100“. Speaker and transformer are especially impregnated.

- If these built-in speaker is required with ceramic terminal block, thermal fuse and fireproof cables, please order the option BS-5839.
- All loudspeaker types are available on all RAL colours on request.

★

Technical data	RC-412AB	RC-420 AB
Load rating (program)	2x 6 (15) W	2x 10 (15) W
Transformer tapings at 100V	2x 6 / 3 / 1,5 W	2x 10 / 5 / 2,5 W
Frequency range (±10dB)	90 – 16.000 Hz	90 – 16.000 Hz
Sound pressure at 1 W/1 m	95 dB	96 dB
Sound pressure SPL Pmax/1 m	111,2 dB @182Hz	113,4 dB @182Hz
Angle of refl. beam 1kHz -6dB	180°	
Speaker and impedance	2x 4"x2,5" / 8 ohms	
Hole cut Ø	200 mm ±5 mm	
Dimensions Ø, Install depth	226 mm / 70 mm	
Weight, Colour	1,8 kg; white	1,9 kg; white



## Model designations

**A/B-Alarming Ceiling-Speaker** ..... **RC-412 AB**  
2x 6 W, with 2x 100V-transformer, white

**A/B-Alarming Ceiling-Speaker** ..... **RC-420 AB**  
2x 10 W, with 2x 100V-transformer, white

# A/B ALARMING CEILING SPEAKER

COMPLIANT TO IEC 60849/VDE 0828

# RCS



100 V

PASSIVE

ACTIVE

2 power classes  
2x 6 W – 2x 10 W  
sine



## Description

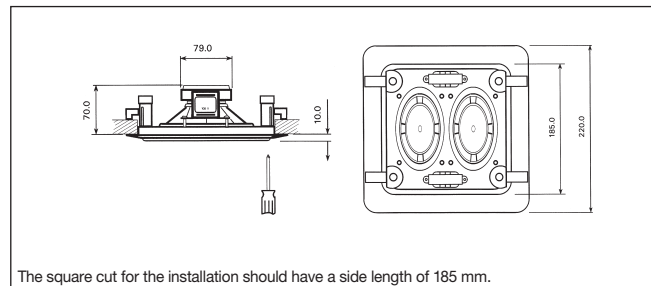
This ceiling speaker is equipped with 2 loudspeakers as well as with 2 transformers. This cabinet speaker enables space-saving A/B division and wiring of the required alarming loudspeakers through [DIN IEC 60849/VDE 0828](#).

Please consider the following features:

- The simple, modern mounting by quick-release fits into all common ceilings and wall thicknesses.
- Two powerful 4"x2,5" oval full range speaker with tweeter cone and two high quality transformers provide a safe A/B wiring.
- The installation frame is made of high-quality plastic, the grille of coated steel. The construction is burgle proof and impact resistant.
- Modern, discreet design with a rim of approx. 2 mm.
- In this series of speaker we also offer a moisture proof version. The technical data is the option „FI-100“. Speaker and transformer are especially impregnated.

- If these built-in speaker is required with ceramic terminal block, thermal fuse and fireproof cables, please order the option BS-5839.
- All loudspeaker types are available on all RAL colours on request.

★



Technical data	SC-512 AB	SC-520 AB
Load rating (program)	2 x 6 (15) W	2 x 10 (15) W
Transformer tapings at 100 V	2 x 6 / 3 / 1,5 W	2 x 10 / 5 / 2,5 W
Frequency range (±10dB)	90 – 16.000 Hz	90 – 16.000 Hz
Sound pressure at 1 W/1 m	95 dB	96 dB
Sound pressure SPL Pmax/1 m	111,2 dB @182Hz	113,4 dB @182Hz
Angle of refl. beam 1kHz -6dB	180°	
Speaker and impedance	2x 4"x2,5" / 8 ohms	
Hole cut (square)	185 x 185 mm ±5 mm	
Dimensions Ø, Install depth	220 mm / 70 mm	
Weight, Colour	2,1 kg; white	2,2 kg; white

## Model designations

**A/B-Alarming Ceiling-Speaker** ..... **SC-512 AB**  
2x 6 W, with 2x 100V-transformer, white

**A/B-Alarming Ceiling-Speaker** ..... **SC-520 AB**  
2x 10 W, with 2x 100V-transformer, white



Installation case made of soaked chipboard, fits the speakers SC-110C and SC-120C for installation in ceilings or walls made of bricks, cement etc.  
Dimensions in mm: 233 (H) x 233 (B) x 100 (T)

**Install. Case** for SC-512AB/520AB... **EZ-120**

100V



2 power classes  
2x 6 W – 2x 10 W  
sine



## Description

This ceiling speaker is equipped with 2 loudspeakers as well as with 2 transformers. This cabinet speaker enables space-saving A/B division and wiring of the required alarming loudspeakers through [DIN IEC 60849/VDE 0828](#).

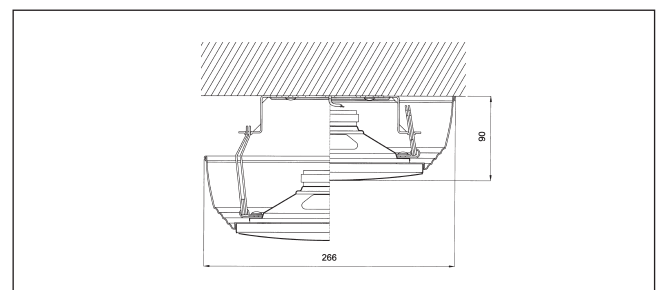
Please consider the following features:

- Speaker in complete metal execution especially for suspending ceiling.
- Two powerful 4"x2,5" oval full range speaker with tweeter cone and two high quality transformers provide a safe A/B wiring.
- In this series of speaker we also offer a moisture proof version. The technical data is the option „FI-100“. Speaker and transformer are especially impregnated.

- If these built-in speaker is required with ceramic terminal block, thermal fuse and fireproof cables, please order the option BS-5839.
- All loudspeaker types are available on all RAL colours on request.

★

Technical data	SCS-512AB	SCS-520 AB
Load rating (program)	2 x 6 (15) W	2 x 10 (15) W
Transformer tapings at 100V	2 x 6 / 3 / 1,5 W	2 x 10 / 5 / 2,5 W
Frequency range (±10dB)	90 – 16.000 Hz	90 – 16.000 Hz
Sound pressure at 1 W/1 m	94 dB	96 dB
Sound pressure SPL Pmax/1 m	106,3 dB @1194Hz	108,6 dB @1194Hz
Angle of refl. beam 1kHz -6dB	180°	
Speaker and impedance	2x 4"x2,5" / 8 ohms	
Dimensions Ø; height	266 mm; 90 mm	
Weight	1,5 kg	
Colour	white	



## Model designations

**A/B-Alarming Ceiling Speaker** ..... **SCS-512 AB**  
2x 6 W, with 2x 100V-transformer, white

**A/B-Alarming Ceiling Speaker** ..... **SCS-520 AB**  
2x 10 W, with 2x 100V-transformer, white

# A/B ALARMING CEILING SPEAKER

COMPLIANT TO IEC 60849/VDE 0828

# RCS



2 power classes  
2x 6 W – 2x 10 W  
sine

100 V

PASSIVE

ACTIVE



## Description

This ceiling speaker is equipped with 2 loudspeakers as well as with 2 transformers. This cabinet speaker enables space-saving A/B division and wiring of the required alarming loudspeakers through **DIN IEC 60849/VDE 0828**.

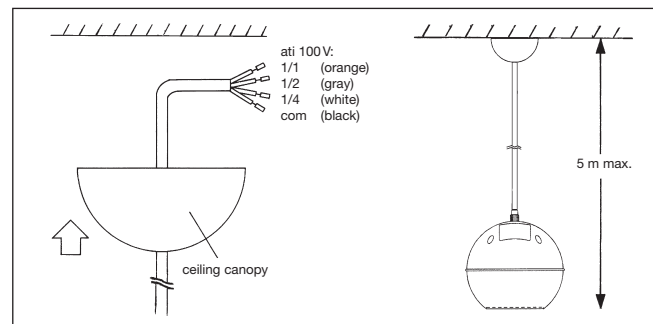
Please consider the following features:

- The ball speakers are made of high-quality impact and scratch resistant plastic. The ball speakers are very efficient where low hanging speakers are required, for example rooms with high ceilings.
- Two powerful 4"x2,5" oval full range speaker with tweeter cone and two high quality transformers provide a safe A/B wiring.
- If these built-in speaker is required with ceramic terminal block, thermal fuse and fireproof cables, please order the option BS-5839.

- The installation is burgle proof. The speaker suspension can be adjusted up to 5m.
- All loudspeaker types are available on all RAL colours on request.

★

Technical data	KL-012AB	KL-020 AB
Load rating (program)	2x 6 (15) W	2x 10 W (15 W)
Transformer tapplings at 100V	2 x 6 / 3 / 1,5 W	2 x 10 / 5 / 2,5 W
Frequency range (±10dB)	90 – 16.000 Hz	90 – 16.000 Hz
Sound pressure at 1 W/1 m	95 dB	96 dB
Sound pressure SPL Pmax/1 m	105,7 dB	107,9 dB
Angle of refl. beam 1kHz -6dB	120°	
Speaker and impedance	2x 4"x2,5" / 8 ohms	
Dimensions	265 x 232,5 mm	
Weight	2,5 kg	
Colour	white	



Supplied with: connection cable 5m, 1 ceiling canopy.

## Model designations

**A/B-Alarming Ball Speaker** ..... **KL-012 AB**  
2x 6 W, with 2x 100V-transformer, white

**A/B-Alarming Ball Speaker** ..... **KL-020 AB**  
2x 10 W, with 2x 100V-transformer, white

100V



2 power classes  
2x 6 W – 2x 10 W  
sine

PASSIVE

ACTIVE



## Description

This ceiling speaker is equipped with 2 loudspeakers as well as with 2 transformers. This cabinet speaker enables space-saving A/B division and wiring of the required alarming loudspeakers through **DIN IEC 60849/VDE 0828**.

Please consider the following features:

- The plastic housing ensures best boom and swing release.
- Two powerful 4"x2,5" oval full range speaker with tweeter cone and two high quality transformers provide a safe A/B wiring.
- The fixing is burgle proof and can be mounted horizontally, vertically on wall or ceiling.

- In this series of speaker we also offer a moisture proof version. The technical data is the option „FI-100“. Speaker and transformer are especially impregnated.
- If these built-in speaker is required with ceramic terminal block, thermal fuse and fireproof cables, please order the option BS-5839.
- All loudspeaker types are available on all RAL colours on request.

★

Technical data	BC-512 AB	BC-520 AB
Load rating (program)	2x 6 (15) W	2x 10 (15) W
Transformer tapings at 100 V	2x 6 / 3 / 1,5 W	2x 10 / 5 / 2,5 W
Frequency range (±10dB)	90 – 18.000 Hz	90 – 18.000 Hz
Sound pressure at 1 W/1 m	94 dB	96 dB
Sound pressure SPL Pmax/1 m	105,7 dB	108 dB
Angle of refl. beam 1kHz -6dB	180° horizontal / 180° vertical	
Speaker and impedance	2x 4"x2,5" / 8 ohms	
Dimensions WxHxD	254 x 204 x 85 mm	
Weight	2,2 kg	2,3 kg
Colour	alpine white/white	alpine white/white

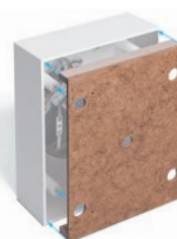
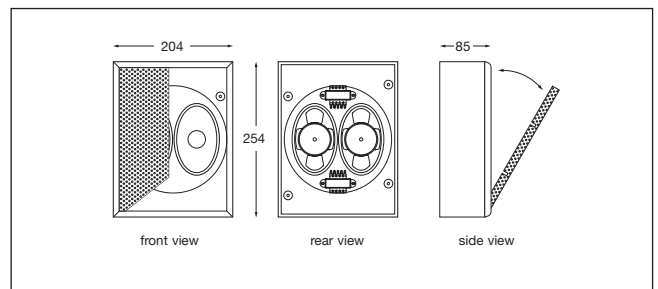
## Model designations

**A/B-Alarming Cabinet Speaker** ..... **BC-512 AB**

2x 6 W, with 2x 100 V-transformer, white

**A/B-Alarming Cabinet Speaker** ..... **BC-520 AB**

2x 10 W, with 2x 100 V-transformer, white



Wooden/MDF rear wall for simple Pressing onto the back of the speaker cabinet. Fits the following types of speakers:

**BC-104/R to BC-110/R; BC-110 C/R to BC-130 C/R, BC-512/520 AB;**

**Wooden rear panel** ..... **BC-HR**

Dimension (WxHxD): 195x245x25 mm

# A/B ALARMING CABINET SPEAKER

COMPLIANT TO IEC 60849/VDE 0828

# RCS



2 power classes  
2x 6 W – 2x 10 W  
sine

**100 V**

PASSIVE

ACTIVE



## Description

This ceiling speaker is equipped with 2 loudspeakers as well as with 2 transformers. This cabinet speaker enables space-saving A/B division and wiring of the required alarming loudspeakers through **DIN IEC 60849/VDE 0828**.

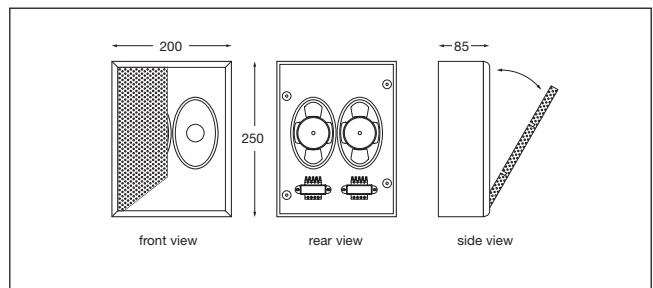
Please consider the following features:

- Redundant dimensioning in a high-quality and mounting-friendly MDF-wood cabinet.
- Two powerful 5"x3" oval full range speaker with tweeter cone and two high quality transformers provide a safe A/B wiring.
- The serial rear panel and the comfortable spring lock do improve mounting considerably.
- Drilling holes on the rear panel enable horizontal and vertical mounting of the loudspeaker.
- If these built-in speaker is required with ceramic terminal block, thermal fuse and fireproof cables, please order the option BS-5839.

- All loudspeaker types are available on all RAL colours on request.

★

Technical data	BCH-612AB	BCH-620
Load rating (program)	2x 6 W (15 W)	2x 10 W (15 W)
Transformer tapplings at 100V	2x 6 / 3 / 1,5 W	2x 10 / 5 / 2,5 W
Frequency range (±10dB)	160 – 20.000 Hz	160 – 20.000 Hz
Sound pressure at 1 W/1 m	101 dB	102 dB
Sound pressure SPL Pmax/1 m	113 dB @10kHz	115,1 dB @10kHz
Angle of refl. beam 1kHz -6dB	120°	
Speaker and impedance	2x 4"x2,5" / 8 ohms	
Dimensions WxHxD	260 x 200 x 85 mm	
Weight	2,2 kg	2,3 kg
Colour	white	white



## Model designations

**A/B-Alarming Cabinet Speaker** ..... **BCH-612AB**  
2x 6 W, with 2x 100V-transformer, white

**A/B-Alarming Cabinet Speaker** ..... **BCH-620AB**  
2x 10 W, with 2x 100V-transformer, white

100V



2 power classes  
6 Watt and 10 Watt  
sine

PASSIVE

ACTIVE



### Description

This cabinet speaker captivates by its remarkable innovative design. The symmetrical shape adapts to all premises in the best way. It can also be used as a ceiling speaker.

Whilst developing this speaker, we put great effort into the functionality and stability. Therefore it is offered in many variations, optionally moisture proof impregnated.

Excellent playback quality and sound fidelity.

Please consider the following features:

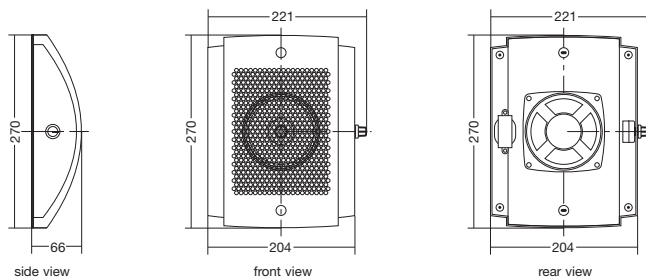
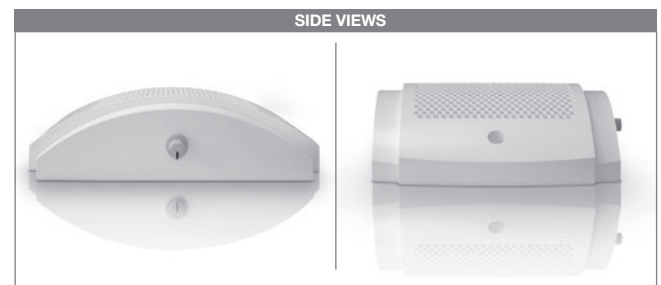
- Easy assembly.
- Option moisture proof impregnated available.
- Available in all desired colours.
- Impact and scratch-proof housing.
- Supplied with high-quality broadband chassis.

### Models with inserted control:

These cabinet speakers are also available with an inserted volume control.

The control is laterally attached and is adjusted by turning the installed knob.

★



Technical data	BC-006 (R)	BC-010 (R)
Load rating (Music power)	6 (15) W	10 (15) W
Transformer tapplings at 100V	6 / 3 / 1,5 W	10 / 5 / 2,5 W
Frequency range (Hz)	150 – 20.000 Hz	150 – 20.000 Hz
Sound pressure at 1W/1m	94 dB	94,5 dB
Sound pressure SPL Pmax/1m	103 dB @1,3kHz	105 dB @1,3kHz
Angle of refl. beam (-6dB) 1/4/8 kHz	180° / 70° / 40°	180° / 60° / 50°
Speaker Ø (mm) and Impedance	130/ 8 ohms	130/ 8 ohms
Dimensions HxWxD (mm)	270 x 204 (221) x 66	270 x 204 (221) x 66
Weight (kg)	approx. 1,0	approx. 1,0

### Model designations

- Design-Cabinet Speaker 6 W** with 100V-transformer . . . . . **BC-006**  
**Design-Cabinet Speaker 10 W** with 100V-transformer . . . . . **BC-010**

### Model designations

- Design-Cabinet Speaker 6 W**, 100V transf., control . . . . . **BC-006R**  
**Design-Cabinet Speaker 10 W**, 100V transf., control . . . . . **BC-010R**

# „Design“-CABINET SPEAKER (with rear panel)

# RCS

2 power classes  
6 Watt and 10 Watt  
sine



100 V

PASSI

ACTIVE



with control

without control



Models with a closed rear panel:

## Description

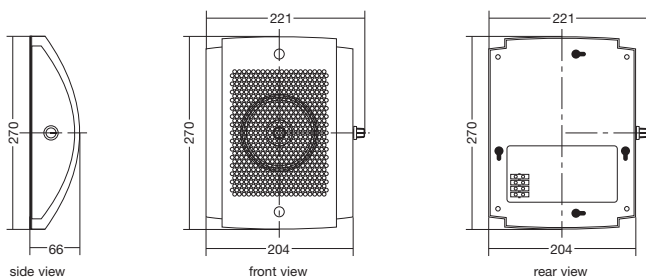
This cabinet speaker captivates by its remarkable innovative design. The symmetrical shape adapts to all premises in the best way. It can also be used as a ceiling speaker.

Whilst developing this speaker, we put great effort into the functionality and stability. Therefore it is offered in many variations, optionally moisture proof impregnated.

Excellent playback quality and sounding truth.

Please consider the following features:

- The BCR series is supplied **with a rear panel**.
- Supplied with high-quality broadband chassis.
- The speaker can be installed both horizontally and vertically.
- Easy attachment of the 100V-line by external screw-type terminal.



## Model designations (with rear panel)

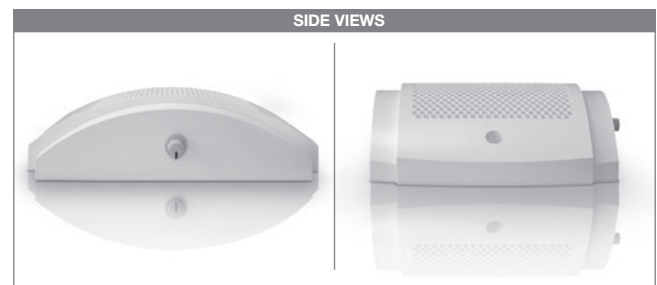
- Design-Cabinet Speaker 6 W**, 100V transf., rear panel. **BCR-006**  
**Design-Cabinet Speaker 10 W**, 100V transf., rear panel. **BCR-010**

## Models with inserted control:

These cabinet speakers are also available with an inserted volume control.

The control is laterally attached and is adjusted by turning the installed knob.

★



Technical data	BCR-006 (R)	BCR-010 (R)
Load rating (Music power)	6 (15) W	10 (15) W
Transformer tapings at 100V	6 / 3 / 1,5 W	10 / 5 / 2,5 W
Frequency range (Hz)	150 – 20.000 Hz	150 – 20.000 Hz
Sound pressure at 1W/1m	94 dB	94,5 dB
Sound pressure SPL Pmax/1m	103 dB @1,3kHz	105 dB @1,3kHz
Angle of refl. beam (-6dB) 1/4/8 kHz	180°/ 70°/ 40°	180°/ 60°/ 50°
Speaker Ø (mm) and Impedance	130/ 8 ohms	130/ 8 ohms
Dimensions HxWxD (mm)	270 x 204 (221) x 66	270 x 204 (221) x 66
Weight (kg)	approx. 1,1	approx. 1,1

## Model designations (with rear panel)

- Design-Cabinet Speaker 6 W**, 100V, r. panel, contr. . **BCR-006 R**  
**Design-Cabinet Speaker 10 W**, 100V, r. panel, contr. **BCR-010 R**

100V  
PASSIVE  
ACTIVE



CBR-006WR  
(with control)

CBR-006SR  
(with control)



**6 W** Adaptations  
6 / 3 / 1,5 W



CBS-006WR  
(with control)

CBS-006SR  
(with control)

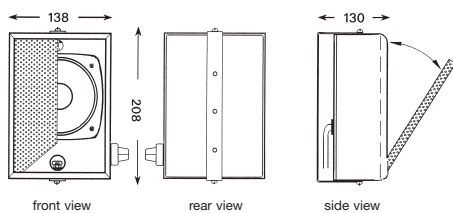
## Description

These unusual, small „Compact“ speakers, of the series CBS and CBR are inexpensive, attractive and easy to mount. The high-quality impact and scratch resistant plastic corpus ensures best boom and swing release. This “soft line” corpus design combined with a high-sound pervious grille cover is modern and decent.

Please consider the following features:

- The fitted high quality matching transformer allows a match to 1/1 – 1/2 – 1/4 of the performance.
- The plastic cabinet is impact and scratch resistant and is available on request in all RAL-colours.

- The model series-CBS (with an open back panel) is constructed to be screwed or hung up (via key hole).
- The model series-CBR has an open back panel and a lay- over mounting bracket, which allows the speaker to be turned in every direction.
- A broadband high performance speaker chassis (Ø 130mm) with an integrated high tone cone ensures a very good sound performance in spite of the small cabinet.
- The built-in volume selector (knob) is on the lower ohm side.
- The fixing is burgle proof and can be mounted horizontally, vertically or to the ceiling.

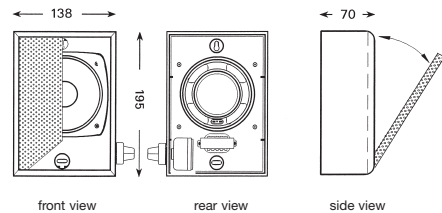


Technical data	CBR-006WR/SR
Load rating (Music power)	6 (15) W
Transformer tappings at 100V	6 / 3 / 1,5 W
Frequency range (Hz)	180 – 17.000 Hz
Sound pressure at 1W/1m	95,5 dB
Sound pressure SPL Pmax/1m	104 dB @4kHz
Angle of refl. beam (-6dB) 1/4/8 kHz	180°/ 60°/ 45°
Speaker Ø (mm) and Impedance	130/ 8 ohms
Dimensions HxWxD/Weight	208 x 138 x 130 mm / approx. 1,3 kg
Colour corpus/ grille	alpine white/white (WR) - grey/black (SR)

## Model designations (with closed back panel and mounting bracket)

**Compact-Cabinet Speaker** 6 W.....**CBR-006WR**  
with 100V matching transformer, white and built-in volume control

**Compact-Cabinet Speaker** 6 W.....**CBR-006SR**  
with 100V matching transformer, black and built-in volume control



Technical data	CBS-006WR/SR
Load rating (Music power)	6 (15) W
Transformer tappings at 100V	6 / 3 / 1,5 W
Frequency range (Hz)	190 – 17.000 Hz
Sound pressure at 1W/1m	95,5 dB
Sound pressure SPL Pmax/1m	104 dB @4kHz
Angle of refl. beam (-6dB) 1/4/8 kHz	180°/ 60°/ 45°
Speaker Ø (mm) and Impedance	130/ 8 ohms
Dimensions HxWxD/Weight	195 x 138 x 70 mm / approx. 1,0 kg
Colour corpus/ grille	alpine white/white (WR) - grey/black (SR)

## Model designations

**Compact-Cabinet Speaker** 6 W.....**CBS-006WR**  
with 100V matching transformer, white and built-in volume control

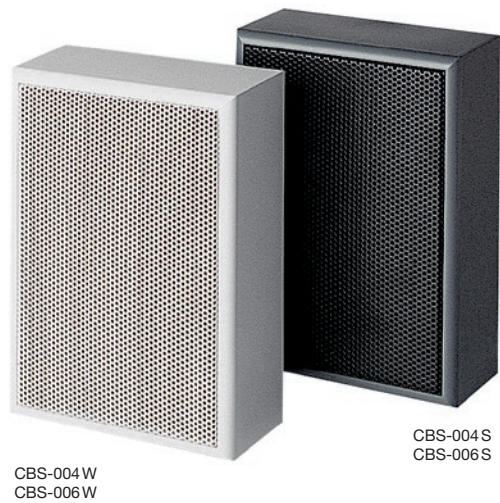
**Compact-Cabinet Speaker** 6 W.....**CBS-006SR**  
with 100V matching transformer, black and built-in volume control

# „Compact“-CABINET SPEAKER

# RCS



2 power classes  
**4 Watt – 6 Watt**  
sine



100 V

PASSIVE

ACTIVE

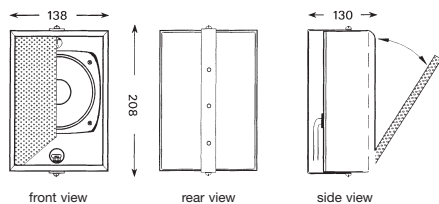
## Description

These unusual, small „Compact“ speakers, of the series CBS and CBR are very inexpensive, attractive and easy to mount. The high-quality impact and scratch resistant plastic corpus ensures best boom and swing release. This “soft line” corpus design combined with a high-sound pervious grille cover is modern and decent.

Please consider the following features:

- A broad band high performance speaker chassis (ø130mm) with an integrated high tone cone and high quality transformer ensure brilliant music playback and excellent speech reproduction despite the small cabinet.

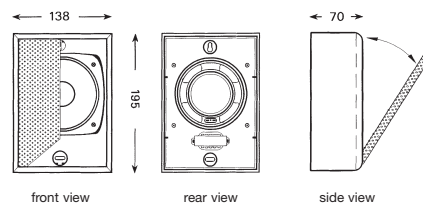
- The model series-CBS (with an open back panel) is constructed to be screwed or hung up (via key hole).
- The model series-CBR has an open back panel and a lay over mounting bracket, which allows the speaker to be turned in every direction.
- The fitted high quality matching transformer allows the matching to 1/1-1/2-1/4 of the performance.
- The mounting is burgle proof and positioned to be horizontal, vertical and to the ceiling.
- The plastic cabinet is impact and scratch resistant and if required can be painted in all RAL colours.



Technical data	CBR-004 W/S	CBR-006 W/S
Load rating (Music power)	4 (15) W	6 (15) W
Transformer tapplings at 100V	4 / 2 / 1 W	6 / 3 / 1,5 W
Frequency range	180 – 16.500 Hz	180 – 17.000 Hz
Sound pressure at 1W/1m	95 dB	95,5 dB
Sound pressure SPL Pmax/1m	102 dB @4,3Hz	104 dB @4kHz
Angle of refl. beam (-6dB) 1/4/8 kHz	180°/ 60°/ 45°	180°/ 60°/ 45°
Speaker Ø (mm) and Impedance	130/ 8 ohms	130/ 8 ohms
Dimensions HxWxD (mm)/Weight	206x138x130 / 1,1 kg	208x138x130 /1,2 kg
Colour corpus/grille	alpine white/white (WR) - grey/black (SR)	

**Model designations** (with closed back panel and mounting bracket)

- Compact-Cabinet Speaker** 4 W, 100 V ..... **CBR-004 W**
- Compact-Cabinet Speaker** 6 W, 100 V ..... **CBR-006 W**
- 
- Compact-Cabinet Speaker** 4 W, 100 V ..... **CBR-004 S**
- Compact-Cabinet Speaker** 6 W, 100 V ..... **CBR-006 S**



Technical data	CBS- 004 W/ S	CBS- 006 W/ S
Load rating (Music power)	4 (15) W	6 (15) W
Transformer tapplings at 100V	4 / 2 / 1 W	6 / 3 / 1,5 W
Frequency range	180 – 16.500 Hz	190 – 17.000 Hz
Sound pressure at 1W/1m	95 dB	95,5 dB
Sound pressure SPL Pmax/1m	102 dB @4,3Hz	104 dB @4kHz
Angle of refl. beam (-6dB) 1/4/8 kHz	180°/ 60°/ 45°	180°/ 60°/ 45°
Speaker Ø (mm) and Impedance	130/ 8 ohms	130/ 8 ohms
Dimensions HxWxD (mm)/Weight	195x138x70/ 0,8 kg	195x138x70/ 0,9 kg
Colour corpus/grille	alpine white/white (WR) - grey/black (SR)	

**Model designations**

- Compact-Cabinet Speaker** 4 W, 100 V ..... **CBS-004 W**
- Compact-Cabinet Speaker** 6 W, 100 V ..... **CBS-006 W**
- 
- Compact-Cabinet Speaker** 4 W, 100 V ..... **CBS-004 S**
- Compact-Cabinet Speaker** 6 W, 100 V ..... **CBS-006 S**

100V



PASSIVE

ACTIVE



with professional 2-way coaxial chassis



- 10 W** Adaptations 2,5 – 5 – 10 W
- 20 W** Adaptations 5 – 10 – 20 W
- 30 W** Adaptations 7,5 – 15 – 30 W

- optional
- optional
- Relay** 24V DC optional
- BS 5839** optional

### Description

A very high quality 2-way coaxial chassis is used in this model series. A separate tweeter has been integrated into the very wide band basic membrane.

This coaxial speaker fulfills professional requirements in relation to sound pressure and sound reproduction. Maximum load 40 W.

Please consider the following features:

- Mounting is very simple. The grille can be lifted off by a screwdriver in order to have access to the fixing screws.
- The plastic cover is impact and scratch resistant and is available on request in all RAL colours.
- The fixing is burgle proof and can be mounted horizontally, vertically or to the ceiling.
- There is room in the cabinet to mount relays, if necessary.

Technical data	BC-110 C(R)	BC-120 C(R)	BC-130 C(R)
Load rating (Music power)	10 (40) W	20 (40) W	30 (40) W
Transformer tapings at 100V	10 / 5 / 2,5 W	20 / 10 / 5 W	30 / 15 / 7,5 W
Frequency range	80 – 20.000 Hz	80 – 20.000 Hz	80 – 20.000 Hz
Sound pressure at 1W/1m	92 dB	92 dB	93 dB
Sound pressure SPL Pmax/1m	103 dB @6kHz	106 dB @6kHz	108 dB
Ang. ref. beam (-6dB) 1/4/8 kHz	100° / 50° / 80°	100° / 50° / 80°	100° / 50° / 80°
Speaker, Ø (mm)/ Impedance	165/ 8 ohms, 2-way coaxial chassis		
Dimensions, HxWxD (mm)	254 x 204 x 85		
Weight	approx. 1,8 kg	approx. 1,9 kg	approx. 1,9 kg
Colour corpus/grille	alpinewhite/white		

The RCS-speakers have been developed according to the newest plastic technology. The high-quality impact and scratch resistant plastic corpus ensures best boom and swing release.

This “soft line” corpus design combined with a high-sound pervious grille cover is modern, discreet and is commented upon in a positive manner by architects.

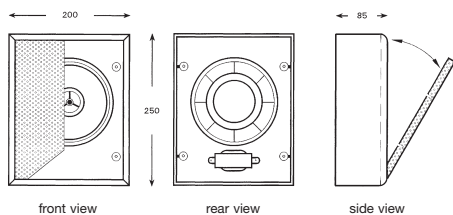
★

### Models with built-in volume control

These cabinet speakers are also available with a fitted volume control (on the lower ohm side).

The control is positioned underneath (lateral, if speaker is mounted horizontally).

The control axis can be adjusted with a screwdriver after taking off the cover cap. It is possible to operate the selector by using the enclosed knob. This only has to be pushed on the axis.



- Cabinet Speaker 10 W**, with 2-way coaxial chassis . . . . . **BC-110C**  
with 100V matching transformer (10 – 5 – 2.5 W), white
- Cabinet Speaker 20 W**, with 2-way coaxial chassis . . . . . **BC-120C**  
with 100V matching transformer (20 / 10 / 5 W), white
- Cabinet Speaker 30 W**, with 2-way coaxial chassis . . . . . **BC-130C**  
with 100V matching transformer (30 – 15 – 7.5 W), white

- Cabinet Speaker 10 W**, with 2-way coaxial chassis . . . . . **BC-110CR**  
with 100V matching transformer (10 – 5 – 2.5 W), white and built-in L-Control
- Cabinet Speaker 20 W**, with 2-way coaxial chassis . . . . . **BC-120CR**  
with 100V matching transformer (20 / 10 / 5 W), white and built-in L-Control
- Cabinet Speaker 30 W**, with 2-way coaxial chassis . . . . . **BC-130CR**  
with 100V matching transformer (30 – 15 – 7.5 W), white and built-in L-Control

# CABINET SPEAKER (with 100V-transformer)



3 power classes  
4 W – 6 W – 10 W  
sine



100 V

PASSIVE

ACTIVE



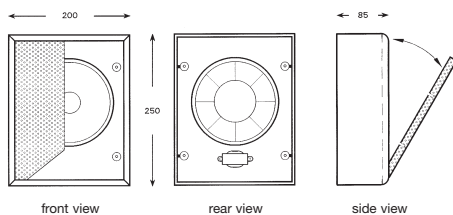
## Description

The RCS speakers have been developed according to the latest knowledge in plastic technology. The high-quality impact and a scratch resistant plastic corpus ensure best boom and swing release.

This “soft line” corpus design combined with a high-sound pervious grille cover is modern and decent.

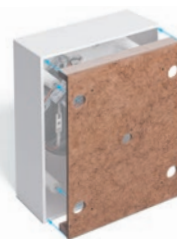
A broadband high performance speaker chassis (dia. 165mm) with an integrated high tone cone and high-quality matching transformer ensures brilliant music playback and excellent speech reproduction

- Mounting is very simple. The grille can be lifted off by a screwdriver in order to have access to the fixing screws.
- The plastic cover is impact and scratch resistant and is available on request in all RAL colours.
- The fixing is burgle proof and can be mounted horizontally, vertically or to the ceiling.
- There is room in the cabinet to mount relays, if necessary.



- Cabinet Speaker 4 W, with 100V-transformer ..... **BC-104**
- Cabinet Speaker 6 W, with 100V-transformer ..... **BC-106**
- Cabinet Speaker 10 W, with 100V-transformer ..... **BC-110**

Technical data	BC-104 (R)	BC-106 (R)	BC-110 (R)
Load rating (Music power)	4 (15) W	6 (15) W	10 (15) W
Transformer tapings at 100V	4 / 2 / 1 W	6 / 3 / 1,5 W	10 / 5 / 2,5 W
Frequency range	90 – 20.000 Hz	90– 18.000 Hz	90 – 16.000 Hz
Sound pressure at 1W/1m	96 dB	96 dB	96 dB
Sound pressure SPL Pmax/1m	103 dB @4,5kHz	106 dB @5kHz	107 dB @5kHz
Ang. ref. beam (-6dB) 1/4/8 kHz	100°/ 50°/ 30°	90°/ 55°/ 40°	90°/ 55°/ 40°
Speaker Ø (mm)/impedance	165/ 8 ohms		
Dimensions, HxWxD (mm)	254 x 204 x 85		
Weight	approx. 1,5 kg	approx. 1,6 kg	approx. 1,7 kg
Colour corpus/grille	alpinewhite/white		



Wooden/MDF rear wall for simple Pressing onto the back of the speaker cabinet. Fits the following types of speakers:

**BC-104/R to BC-110/R; BC-110C/R to BC-130C/R, BC-512/520AB;**

**Wooden rear panel ..... BC-HR**  
Dimensions (WxHxD): 195x245x25 mm

## Models with built-in volume control

These cabinet speakers are also available with a fitted volume control (on the lower ohm side).

The control is positioned underneath (lateral, if speaker is mounted horizontally).

The control axis can be adjusted with a screwdriver after taking off the cover cap. It is possible to operate the selector by using the enclosed knob. This only has to be pushed on the axis.

- Cabinet Speaker 4 W, with 100V-transf./control. .... **BC-104 R**
- Cabinet Speaker 6 W, with 100V-transf./control. .... **BC-106 R**
- Cabinet Speaker 10 W, with 100V-transf./control ..... **BC-110 R**

100V



3 power classes  
4 W – 6 W – 10 W  
sine

Square, also suitable  
for ceiling mounting



### Description

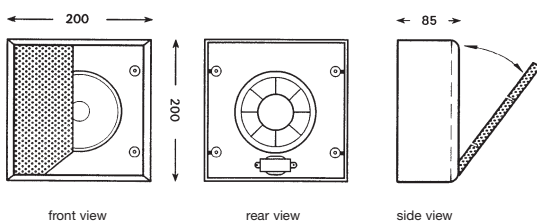
The RCS speakers have been developed according to the latest knowledge in plastic technology. The high-quality impact and scratch resistant plastic corpus ensures best boom and swing release.

This “soft line” corpus design combined with a high-sound pervious grille cover is modern and decent.

A broadband high performance speaker chassis (Ø 130mm) with an integrated high tone cone and a high-quality matching transformer ensure brilliant music playback and excellent speech reproduction.

Please consider the following features:

- Mounting is very simple, the grille can be lifted off with a screwdriver in order to have access to the fixing screws.
- The plastic cover is impact and scratch resistant and is available on request in all RAL colours.
- The fixing is burgle proof and can be mounted horizontally, vertically or to the ceiling.
- In the cabinet is enough free space to install additional relays, if necessary.



Technical data	BC-304 (R)	BC-306 (R)	BC-310 (R)
Load rating (Music power)	4 (15) W	6 (15) W	10 (15) W
Transformer tapings at 100V	4 / 2 / 1 W	6 / 3 / 1,5 W	10 / 5 / 2,5 W
Frequency range	100 – 20.000 Hz	100 – 20.000 Hz	100 – 20.000Hz
Sound pressure at 1W/1m	94,5 dB	95 dB	95 dB
Sound pressure SPL Pmax/1m	101 dB@1,2kHz	104 dB@1,2kHz	106 dB@1,2kHz
Angle of refl. beam (-6dB) 1/4/8 kHz	90°/ 55°/ 40°	100°/ 50°/ 35°	90°/ 60°/ 40°
Speaker Ø (mm)/impedance	130/ 8 ohms		
Dimensions, HxWxD (mm)	200 x 200 x 85		
Weight	approx. 1,3 kg	approx. 1,4 kg	approx. 1,5 kg
Colour corpus/grille	alpinewhite/white		

★

### Models with built-in volume control

These cabinet speakers are also available with a fitted volume control (on the lower ohm side).

The control is positioned underneath (lateral, if speaker is mounted horizontally).

The control axis can be adjusted with a screwdriver after taking off the cover cap. It is possible to operate the selector by using the enclosed knob. This only has to be pushed on the axis.

**Cabinet Speaker 4 W**, with 100V-transformer ..... **BC-304**

**Cabinet Speaker 6 W**, with 100V-transformer ..... **BC-306**

**Cabinet Speaker 10 W**, with 100V-transformer ..... **BC-310**

**Cabinet Speaker 4 W**, with 100V-transf./control. .... **BC-304R**

**Cabinet Speaker 6 W**, with 100V-transf./control. .... **BC-306R**

**Cabinet Speaker 10 W**, with 100V-transf./control. .... **BC-310R**

# CABINET SPEAKER (with 100V-transformer)



2 power classes  
6 W – 10 W  
sine



without control

with control

- optional
- optional
- optional
- optional

100 V

PASSIVE

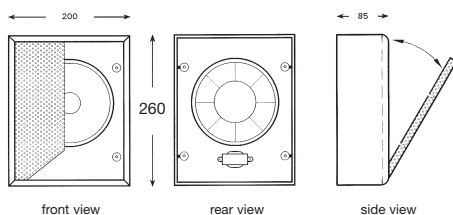
ACTIVE

## Description

This cabinet speaker is made of coated MDF wood and is due to its thought-out construction absolutely swinging- and boom-free. In connection with the broadband high performance chassis an excellent speech and music playback can be reached. The design is modern, decent and is commented upon in a positive manner by architects. The rear panel and the comfortable spring snatch lock make the assembly substantially easier.

Please consider the following features:

- The installed 100V-transformer enables the tapping to 1/1, 1/2 and 1/4 performance in each case.
- Drilled holes in the rear panel allow a horizontal or vertical attachment of the speakers.
- The models BCH-406R/410 R are delivered with an installed volume control.
- The speakers are available in all RAL colours on request.

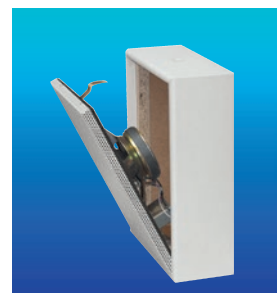


**Cabinet Speaker 6 W** ..... **BCH-406**  
with 100V-transformer

**Cabinet Speaker 10 W** ..... **BCH-410**  
with 100V-transformer

Technical data	BCH-406 (R)	BCH-410 (R)
Load rating (Music capacity)	6 (15) W	10 (15) W
Transformer tapings at 100 V	6 / 3 / 1,5 W	10 / 5 / 2,5 W
Frequency range	120 – 16.000 Hz	120 – 16.000 Hz
Sound pressure at 1W/1m	96 dB	96 dB
Sound pressure SPL Pmax/1m	106 db @ 5 kHz	107 dB @ 5 kHz
Angle of refl. beam 1/4/8 kHz:	90°/55°/40°	90°/55°/40°
Speaker Ø (mm)/impedance	165 mm/8 ohms	165 mm/8 ohms
Dimensions, HxWxD (mm)	260 x 200 x 85	
Weight	approx. 1,6 kg	approx. 1,7 kg
Colour corpus / grille	alpinewhite/white	

★



Easy assembly due to comfortable spring snatch lock

## Models with built-in volume control

These cabinet speakers are also available with a fitted volume control (on the lower ohm side).

The control is positioned underneath (lateral, if speaker is mounted horizontally).

The control axis can be adjusted with a screwdriver after taking off the cover cap. It is possible to operate the selector by using the enclosed knob. This only has to be pushed on the axis.

**Cabinet Speaker 6 W** ..... **BCH-406 R**  
with 100V-transformer and control

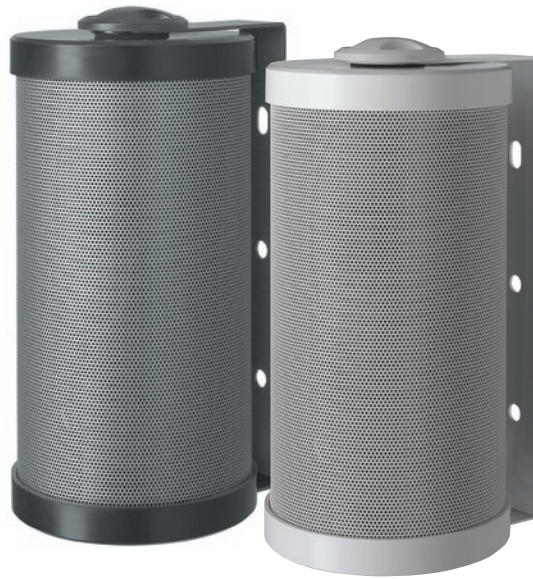
**Cabinet Speaker 10 W** ..... **BCH-410 R**  
with 100V-transformer and control

100V

PASSIVE

ACTIVE

**15 W** Impedance selector switch  
15 - 10 / 5 / 2,5 W - 8 ohms



Metal mounting bracket for surface mounting  
(speaker appr. 360° swivelling)



### Description

This round and elegant speaker boasts an interesting design, functions excellently and meets even special architectural expectations.

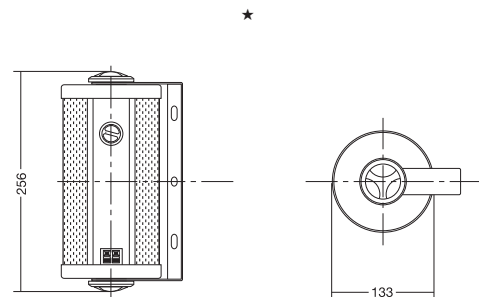
A 2-way bass reflex system provides for outstanding speech and music playback. On the rear side a rotary switch serves for the adjustment of low and high impedance areas. Easy and quick installation is enabled by the 2-pin clamping terminal at the rear side.

In the scope of supply metal handles serve for the attachment and enable to turn the column speaker appr. 360°.

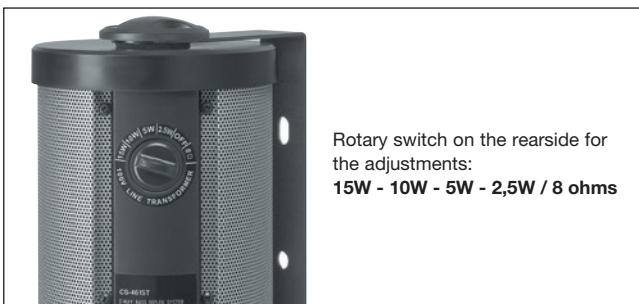
Please consider the following features:

- The rotary switch mounted on the outside of the speaker is adjustable from 15W - 10W - 5W - 2.5W 8 ohms to OFF. A fitted high quality matching transformer makes this possible.
- The assembly is possible horizontally or vertically on the wall or ceiling.

- All CS series models are equipped with mounting brackets enabling the speaker to swivel in all directions.
- The M6 thread hole in the middle of the speakers allows for stand fitting (PST-100). A threadpin allows for the stacking of the speakers.



For wall or ceiling mounting is necessary with mounting brackets, these can be easily removed for the stand assembly (threaded bore M6).



Rotary switch on the rearside for the adjustments:  
**15W - 10W - 5W - 2,5W / 8 ohms**

Technical data	CS-115W	CS-115S
Load rating (Music power)	(at 8 ohms) 15 W RMS (30 W max.)	
Transformer tapings at 100V	15 - 10 / 5 / 2,5 W	
Frequency range	170 - 20.000 Hz	
Sound pressure at 1W/1m	93 dB	
Sound pressure SPL Pmax/1m	106 dB @0,3kHz	
Angle of refl. beam (-6dB) 1/4/8 kHz	170°/ 50°/ 60°	
Dimensions, Ø x H	133 mm x 256 mm	
Weight	2,1 kg	
Colours corpus / grille	white / white	black / silver
Speaker Ø and Nominal impedance	4" x 6" Woofer + 13 mm Dome-Tweeter	

**Round-Cabinet Speaker, black**..... **CS-115S**  
with 100V-transformer

**Round-Cabinet Speaker, white**..... **CS-115W**  
with 100V-transformer

# BASS REFLEX CEILING SPEAKER

# RCS



## „Sound-Dome“ Mounting speaker

with 100 V-transformer,  
outstanding sound quality and performance

100 V

PASSIVE

ACTIVE

### Description

The high performance 2-way speaker for high musical requirements!

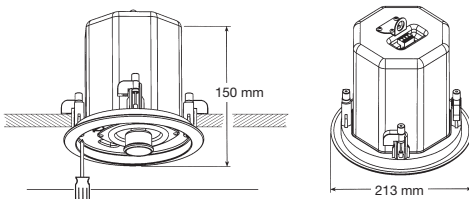
The high-quality coaxial chassis provides, in connection with the aluminum case and the integrated bass reflex pipe, for a brilliant sound and outstanding sound pressure. Therefore this speaker is well suited for the use in large restaurants, conference rooms, etc. The Sound-Dome can also be used in gyms and sports halls, as it has a impact resistant structure.

The impedance selector switch at the front enables fast access, so that the speaker can be adjusted to the local conditions at any time.

Please consider the following features:

- Available on option „moisture proof impregnated“ chassis and transformer.
- Easy installation with high-speed snap fastener.
- On request available in all RAL colours.
- Screw connection terminals with one input and one output per terminal, enable a speedy connection with further speakers.
- Under the grille the impedance selector switch can also be set to 16 ohms.

### sine 30 W

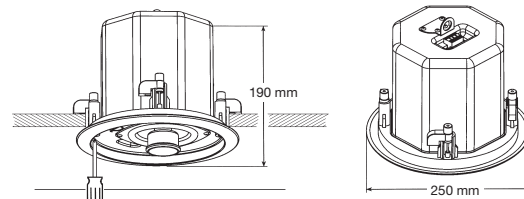


The hole cut-out should have:  $\varnothing$  188 mm +/- 5 mm.  
Installation depth should amount to no less than 150 mm.

Technical data	RSD-301
Load rating (Music power)	30 W (45 W)
Transformer tapplings at 100V	30 / 15 / 7,5 W
Frequency range	80 – 20.000 Hz
Sound pressure at 1W/1m	92,5 dB
Sound pressure SPL Pmax/1m	112 dB @20kHz
Angle of refl. beam (-6dB) 1/4/8 kHz	180°/ 100°/ 90°
Speaker $\varnothing$ in mm and Impedance	$\varnothing$ 105 mm (16 ohms)
Dimensions $\varnothing$ x Install. depth	213 mm x 150 mm
Weight, Colour, Material	approx. 2,2 kg, white

**Sound-Dome Ceiling Speaker** ..... **RSD-301**  
30 W, with 100V-transformer and 16 ohms, white

### sine 60 W



The hole cut-out should have:  $\varnothing$  225 mm +/- 5 mm.  
Installation depth should amount to no less than 190 mm.

Technical data	RSD-601
Load rating (Music power)	60 W (90 W)
Transformer tapplings at 100V	60 / 30 / 15 W
Frequency range	60 – 20.000 Hz
Sound pressure at 1W/1m	97,5 dB
Sound pressure SPL Pmax/1m	116 dB @8kHz
Angle of refl. beam (-6dB) 1/4/8 kHz	180°/ 80°/ 65°
Speaker $\varnothing$ in mm and Impedance	$\varnothing$ 160 mm (16 ohms)
Dimensions $\varnothing$ x Install. depth	250 mm x 190 mm
Weight, Colour, Material	approx. 3,3 kg, white

**Sound-Dome Ceiling Speaker** ..... **RSD-601**  
60 W, with 100V-transformer and 16 ohms, white

100V

3 Power classes  
4 W – 6 W – 10 W  
sinus

PASSIVE

ACTIVE



### Description

This speaker has the simplest and most up-to-date type of mounting, a QUICK RELEASE, which sets new standards in terms of safety and simplicity.

The assembly or disassembly is carried out only by tightening 4 screws, which are accessible after lifting the perforated plate (for example with a screwdriver).

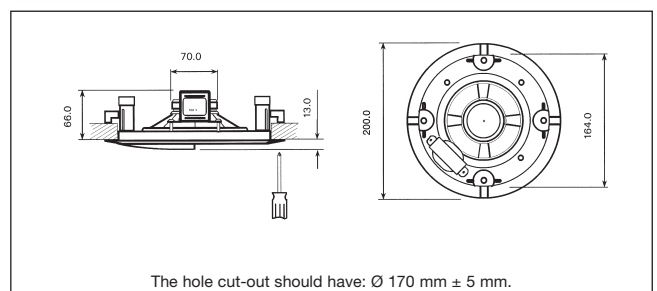
The installation frame is made of high quality plastic, the grille of coated steel. The construction is burgle proof and impact resistant.

Please consider the following features:

- Modern, understated design with a rim height of approx. 2 mm.
- High-quality, broadband 5¼ chassis with integrated high-tone cone are used.
- The speaker is available impregnated, with a specially prepared chassis and matching transformer.
- As with all our speaker types, a special finish is available on request.

- Optionally available with specially prepared chassis and transformer in „humid room“ design. If desired, simply order the „FI-100“ option.

★



### Model designations

- Ceiling Speaker, 4W** ..... **RC-104**  
with 100V-transformer, white
- Ceiling Speaker, 6W** ..... **RC-106**  
with 100V-transformer, white
- Ceiling Speaker, 10W** ..... **RC-110**  
with 100V-transformer, white

Technical data	RC-104	RC-106	RC-110
Load rating (Music power)	4 (6) W	6 (15) W	10 (15) W
Transformer tapplings at 100V (in W)	4 / 2 / 1 W	6 / 3 / 1,5 W	10 / 5 / 2,5 W
Frequency range	75 – 18.500 Hz	75 – 20.000 Hz	75 – 20.000 Hz
Sound pressure at 1W/1m	91,5 dB	91,5 dB	91,5 dB
Sound pressure SPL Pmax/1m	98 dB @3kHz	100 dB @3kHz	102 dB @3kHz
Angle of refl. beam (-6dB) 1/4/8 kHz	180° / 100° / 45°	180° / 120° / 70°	180° / 110° / 60°
Speaker Ø (mm) and Impedance	130/ 8 ohms		
Dimensions Ø, Install. depth (max.)	200 (66) mm		
Weight (kg), Colour	appr. 1,1; white	appr. 1,2; white	appr. 1,3; white

# WALL AND CEILING SPEAKER

# RC·S



3 Power classes  
10 W – 20 W – 30 W  
sinus

100 V

PASSI

ACTIVE



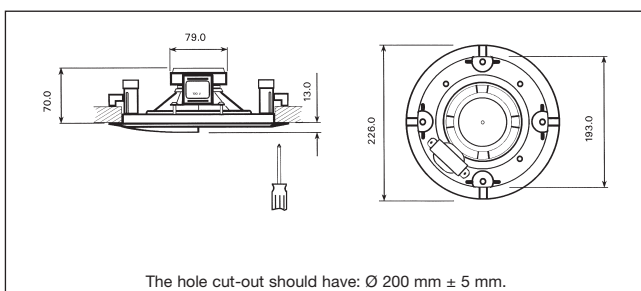
## Description

The RC-110C, RC-120C and RC-130C models are the same design, construction and mounting style as the model series (RC-110/120/130) described opposite.

They are larger in measurement and proportion. It is therefore possible to insert a high-quality 6 1/2" 2-way coaxial chassis. This 2-way coaxial chassis has a very wide band basic membrane with a separate tweeter integrated.

This broadband 2-way coaxial speaker chassis also meets professional requirements in terms of sound pressure and tone reproduction. The load capacity is max. 40W. A high-quality matching transformer supplies best music and speech quality.

- Modern, very discreet design with a rim height of about 2 mm.
- High-quality 6 1/2" 2-way coaxial chassis with separated tweeter are used.
- The simple and modern assembly with quick-release fastener adapts to all standard ceiling thicknesses and is also ideal for plasterboard ceilings.
- RAL special paint available on request.
- Optionally available with specially prepared chassis and transformer in „humid room“ design. If desired, simply order the „FI-100“ option.



with professional 2-way coaxial chassis

Technical data	RC-110 C	RC-120 C	RC-130 C
Load rating (Music power)	10 W (40 W)	20 W (40 W)	30 W (40 W)
Transformer tapings at 100V (in W)	10 / 5 / 2,5 W	20 / 10 / 5 W	30 / 15 / 7,5 W
Frequency range	45 – 20.000 Hz	35 – 20.000 Hz	35 – 20.000 Hz
Sound pressure at 1W/1m	93 dB	92 dB	92 dB
Sound pressure SPL Pmax/1m	104 dB @6kHz	106 dB @6kHz	108 dB @6kHz
Angle of refl. beam (-6dB) 1/4/8 kHz	180° / 80° / 110°		
Speaker Ø (mm) and Impedance	165/ 8 ohms, 2-way coaxial chassis		
Dimensions Ø, Install. depth (max.)	226 (70) mm		
Weight (kg), Colour	appr. 1,8; white	appr. 1,9; white	appr. 2,1; white

## Model designations

**Ceiling Speaker, 10W** with 2-way coaxial chassis. . . . . **RC-110 C**  
with 100V-transformer, white

**Ceiling Speaker, 20W** with 2-way coaxial chassis. . . . . **RC-120 C**  
with 100V-transformer, white

**Ceiling Speaker, 30W** with 2-way coaxial chassis. . . . . **RC-130 C**  
with 100V-transformer, white

100V

10W Adaptions  
3 / 6 / 10 W



## „Snap-In Mount“

### Ceiling Speaker

with 100 V-transformer

### Description

This ceiling speaker is made of full metal. By the two assembly brackets, which tighten automatically by spring action when inserting the speaker into the hole, assembling time is reduced to a minimum.

The speaker is in one piece and surprisingly easy to mount. The grille and installation ring are made of varnished steel, and meet most fire regulation rules.

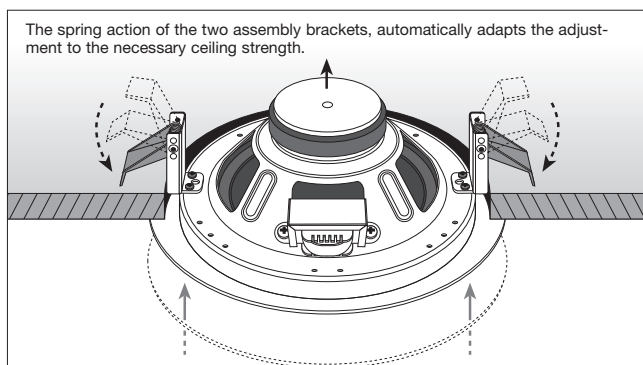
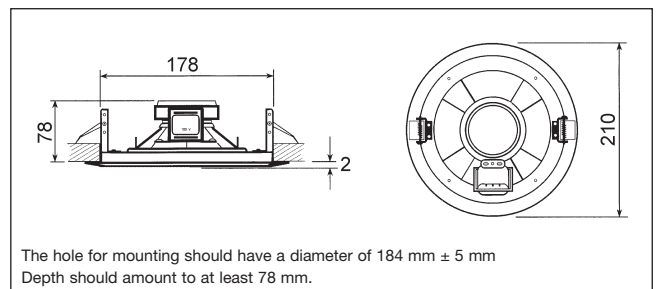
A high-quality, wide band speaker chassis (6½") and an equivalent 100V matching transformer allow perfect speech and music reproduction.

Please consider the following features:

- Modern, very understated design with approx. 2 mm rim height.
- Very easy to mount, suitable for all ceiling types.
- Impact resistance certificate with the option „BW-200“.
- Optionally with specially prepared chassis and transformer also in humid room execution available.

- A special lacquer finish of the speaker in all RAL colours is possible, if desired.
- The high-quality 100V-transformer permits different adjustments. Please take further details from the technical data, shown below.

★



Technical data	RC-210 A
Load rating (Music capacity)	10 W (15 W)
Transformer tapings at 100V	10 / 5 / 2,5 W
Frequency range	60 – 20.000 Hz
Sound pressure at 1W/1m	94,5 dB
Sound pressure SPL Pmax/1m	105dB@6kHz
Speaker	6,5" Full-Range
Dimensions Ø, Install. depth (max.)	210 x 78 mm
Hole cut Ø	184 mm (±5mm)
Weight (kg), Colour	approx. 1,4 kg, white

### Model designation

**Snap-In Mount-Ceiling Speaker, 10W..... RC-210 A**  
with 100V-transformer, white

**Impact resistance, (option) ..... BW-200**



## Description

This ceiling speaker is made of full metal. By the three assembly brackets, which tighten automatically by spring action when inserting the speaker into the hole, assembling time is reduced to a minimum.

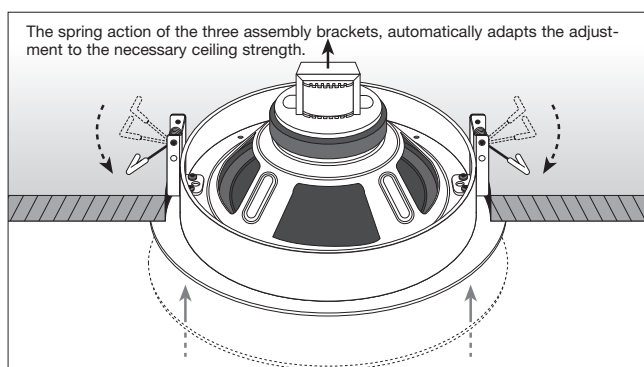
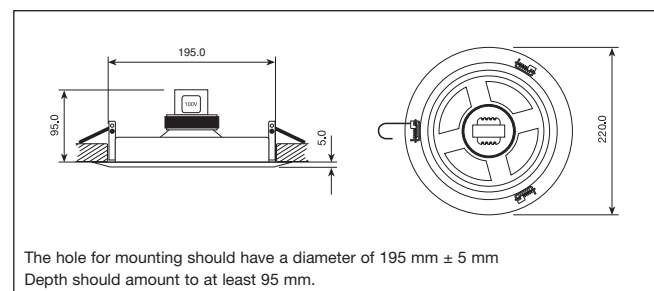
The three brackets fits into all common ceilings and wall thicknesses and provide a secure attachment. The speaker unit is held in place by bayonet-attachment. The grille and installation ring are made of varnished steel, and meet most fire regulation rules.

A high-quality, wide band speaker chassis (6,5") and an equivalent 100V matching transformer allow perfect speech and music reproduction.

Please consider the following features:

- Modern, very understated design with approx. 1 mm rim height.
- Very easy to mount, suitable for all ceiling types.
- With Option FI-100 also available as moisture proof version.

★



Technical data	RC-306
Load rating (Music capacity)	6 W (15 W)
Transformer tapplings at 100 V	6 / 3 / 1,5 W
Frequency range	97 – 20.000 Hz
Sound pressure at 1W/1m	110 dB
Sound pressure SPL Pmax/1m	107 dB
Angle of refl. beam (-6dB) 1/4/8 kHz	180°
Speaker Ø (mm) and Impedance	165 mm / 8 ohms
Dimensions Ø, Install. depth (max.)	220 x 95 mm
Weight, Colour	approx. 1,1 kg – white (RAL 9010)

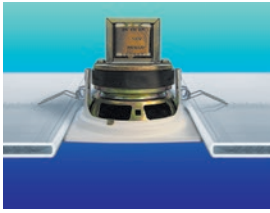
## Model designation

Ceiling Speaker, 6W with 100V-transformer, white.....**RC-306**

100V

PASSIVE

ACTIVE



„Spot-Design“

Ceiling speaker

with 100 V-transformer



**6 W** Adaptations  
6 - 4 - 2 W

## Description

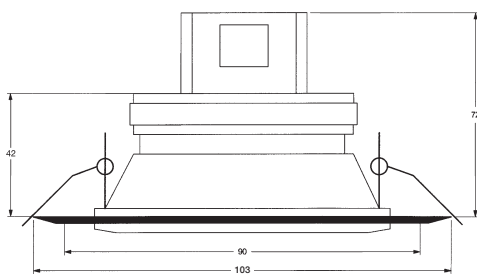
Small, quadratic ceiling and wall speaker, which is also suitable for the installation in 100 mm conduits. Due to inconspicuous design and a harmonized choice of colour it perfectly matches any premises. A 2-1/2" wide band speaker ensures excellent sound and therefore this device may be used for voice transmission as well as for background music purposes.

Please consider the following features:

- The matching transformer is suitable for a 100V connection and can be adapted to 6 W, 4 W or 2 W power.
- The fitted speaker can be adapted to a lower resistance (8 ohms, 6 W). It is connected directly to the chassis. A special delivery with a 20 cm wire and connection clamp is possible.
- The speaker is also available in a moisture proof version, an especially prepared chassis and matching transformer. Please order "FI-100" for this option.

- Special speaker colours are available on request.
- Two mounting springs ease assembling a great deal and ensure tension force for secure hold. Through this these loudspeakers adjust to any usual wall- and ceiling thicknesses.

★

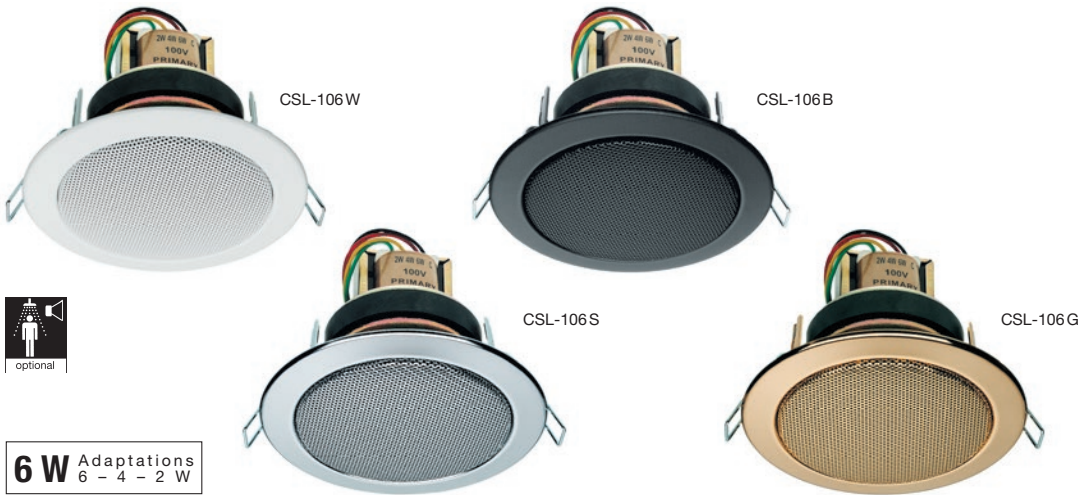


The necessary hole cut should have a Ø of 90 mm ± 3 mm.

Technical data	CSQ-106 W
Load rating (Music power)	6 W (10W)
Transformer tapings at 100V	6 - 4 - 2 W
Frequency range	110 - 20.000 Hz
Sound pressure at 1W/1m	87 dB
Sound pressure SPL Pmax/1m	95 dB @0,3kHz
Angle of refl. beam (-6dB) 1/4/8 kHz	180°/ 100°/ 180°
Speaker Ø (mm) and Impedance	64 / 8 ohms
Dimensions HxWxD; Install. depth (max.)	103 x 103 x 47 mm; 72 mm
Weight (g); Colour	500 g, white

## Model designation

**Spot-Design-Ceiling-Speaker, white** ..... **CSQ-106 W**  
with 100V-transformer, 6 W



Design and dimensions particularly designed for the supplement of halogen light systems.

100 V

PASSIVE

ACTIVE

**6 W** Adaptations  
6 - 4 - 2 W

**„Spot-Design“**  
Ceiling speaker  
with 100 V-transformer

## Description

These “Spot Design” fitted speakers fit in very well with the current halogen light systems.

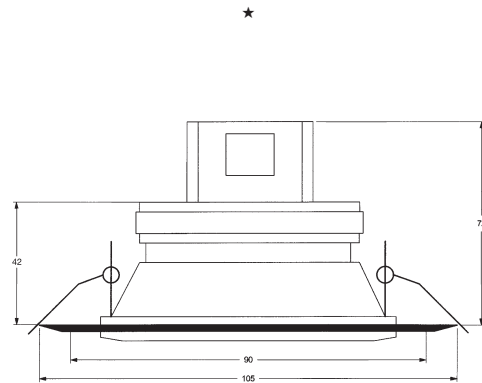
They have a 2 1/2” wide band speaker and an outstanding tone. This speaker is suitable for speech and background music.

This speaker is used where functionality, a special design or small measurements are required.

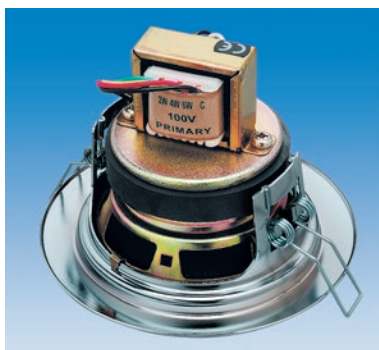
Please consider the following features:

- The frame and the grill made of metal and are available in four colors (white, black, gold and silver), making the possibilities, even under the aspects of design and architecture, very versatile.
- The exceedingly easy mounting with 2 metal springs fits all ordinary ceilings and walls.
- The matching transformer is suitable for a 100V connection and can be adapted to 1/1 – 1/2 – 1/4 power.
- The fitted speaker can be adapted to a lower resistance (8 ohms, 6W). It is connected directly to the chassis. A special delivery with a 20 cm wire and connection clamp is possible.

- Special speaker colours are available on request.
- The speaker is also available in a moisture proof version, an especially prepared chassis and matching transformer. Please order “FI-100” for this option.



The necessary hole cut should have a Ø of 90 mm ± 3 mm.



This picture shows the simple and time-saving assembly with 2 metal springs.

Technical data	CSL-106W/B/G/S
Load rating (Music power)	6 W (10W)
Transformer tappings at 100V	6 - 4 - 2 W
Frequency range	110 - 20.000 Hz
Sound pressure at 1W/1m	87 dB
Sound pressure SPL Pmax/1m	95 dB @0,3kHz
Angle of refl. beam (-6dB) 1/4/8 kHz	180°/ 100°/ 180°
Speaker Ø (mm) and Impedance	64/ 8 ohms
Dimensions Ø, Install. depth (max.)	105 x 72 mm
Weight (g), Colours	500 g, white, black, gold, silver

**Spot-Design-Ceiling Speaker**, white..... **CSL-106W**  
with 100V-transformer, 6 W

**Spot-Design-Ceiling Speaker**, black..... **CSL-106B**  
with 100V-transformer, 6 W

**Spot-Design-Ceiling Speaker**, gold ..... **CSL-106G**  
with 100V-transformer, 6 W

**Spot-Design-Ceiling Speaker**, silver..... **CSL-106S**  
with 100V-transformer, 6 W

100V

**40 W** Adaptations  
10 / 20 / 40 W



Including tilt "eyeball-tweeter" system



### Description

This 2-way fitted speaker with a very wide band woofer chassis and the new "eyeball" tweeter (patent) is of professional Hi-Fi quality.

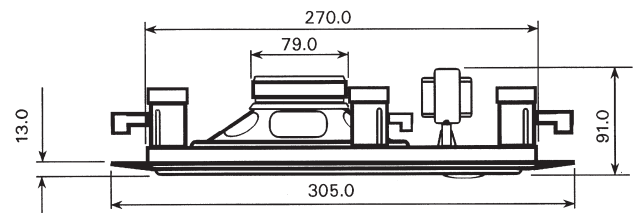
The "eyeball" tweeter and grille can be tilted in every direction, by which the height emission can be driven in every direction.

Please consider the following features:

- Very practical and secure mounting with 6 quick-tightening clasps (burgle proof).
- Very attractive design (rim height only 3.5 mm), frame made of high-quality impact and scratch resistant plastic with a grille made of burn-in painted steel.
- High-quality 100V matching transformer for 1/1-1/2-1/3 performance, also lower ohm connection possible.
- The 2-way fitted speaker SC-400WT is suitable for high rooms with a medium disturbance level.

- The installation case EZ-400 greatly improves the resonance.

★



Necessary hole cut: 275 mm x 190 mm, ± 5 mm.



Installation case made of soaked chipboard for fitting the SC-400WT into ceilings, brick walls, concrete, etc.  
Dimensions: 315 (H) x 233 (W) x 86 (D) in mm

**Installation Case** for SC-400WT ... **EZ-400**

Technical data	SC-400 WT
Load rating (Music power)	40 W (60 W)
Transformer tapplings at 100V	40 W – 20 W – 10 W
Frequency range	25 – 20.000 Hz
Sound pressure at 1W/1m	87,5 dB
Sound pressure SPL Pmax/1m	104 dB @1,2kHz
Angle of refl. beam (-6dB) 1/4/8 kHz	180°/ 90°/ 180°
Speaker	Woofer Ø 165 mm (8 ohms) + 1 Tweeter
Dimensions B x L x H	220 mm x 305 mm x 91 mm
Weight, Colour, Material	appr. 2.1 kg, white, plastic steel grille

**2-way Ceiling Speaker, ... SC-400 WT**  
white, with 100V-transformer, with „eyeball-tweeter“

# WALL AND CEILING SPEAKER

# RCS

3 power classes  
4 W – 6 W – 10 W  
sine

square



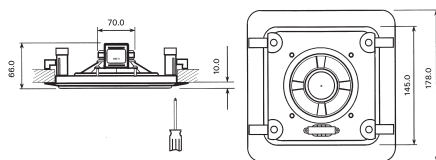
## Description

This speaker has the most modern and easy fitting method, a quick fastening clasp. It sets new standards in security and easiness. Four screws to mount or dismount and lifting off the grille (with a screwdriver) is all that is necessary.

The installation frame is made of high-quality plastic, the grille of coated steel. The construction is burgle proof and impact resistant.

- Modern, understated design with a rim of approx. 2 mm.
- A high-quality wide band 5 1/4" chassis is used with an integrated high tone cone.

Technical data	SC-104	SC-106	SC-110
Load rating (Music power)	4 (6) W	6 (15) W	10 (15) W
Transformer tapings at 100V	4 / 2 / 1 W	6 / 3 / 1,5 W	10 / 5 / 2,5 W
Frequency range	75 – 18.500 Hz	75 – 20.000 Hz	75 – 20.000 Hz
Sound pressure at 1W/1m	91,5 dB	91,5 dB	91,5 dB
Sound pressure SPL Pmax/1m	98 dB @3kHz	100 dB @3kHz	102 dB @3kHz
Angle of refl. beam (-6dB) 1/4/8 kHz	180° / 100° / 45°	180° / 120° / 70°	180° / 110° / 60°
Speaker Ø (mm) and Impedance	130 / 8 ohms		
Side dimension, Install. depth	178 (60) mm		
Weight (kg), Colour	appr. 1,1; white	appr. 1,2; white	appr. 1,3; white



The square cut for the installation should have a side length of 145 mm.

- Ceiling Speaker, 4 W** with 100V-transformer, white ..... **SC-104**
- Ceiling Speaker, 6 W** with 100V-transformer, white ..... **SC-106**
- Ceiling Speaker, 10 W** with 100V-transformer, white ..... **SC-110**



Installation case made of soaked chipboard, fits the speakers SC-104/106/110 for installation in ceilings or walls made of bricks, cement etc.  
Dimensions in mm: 193 (H) x 193 (W) x 84 (D)

**Installation Case** for SC-104/106/110 **EZ-110**

square

3 power classes  
10 W – 20 W – 30 W  
sine



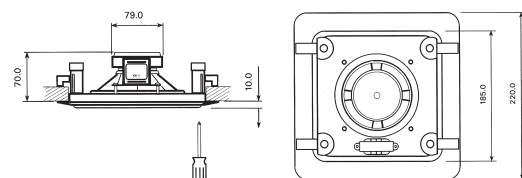
## Description

The models SC-110C and SC-120C are identical to the model described, on the opposite side.

This model series has a very high-quality 2-way coaxial chassis. A separate tweeter is integrated into the very wide band lined basic membrane. This coaxial speaker case ensures professional sound pressure and sound reproduction. Maximum capacity is 40 W.



Technical data	SC-110 C	SC-120 C	SC-130 C
Load rating (Music power)	10 W (40 W)	20 W (40 W)	30 W (40 W)
Transformer tapings at 100V	10 / 5 / 2,5 W	20 / 10 / 5 W	30 / 15 / 7,5 W
Frequency range	45 – 20.000 Hz	35 – 20.000 Hz	35 – 20.000 Hz
Sound pressure at 1W/1m	92 dB	92 dB	92 dB
Sound pressure SPL Pmax/1m	104 dB @6kHz	106 dB @6kHz	108 dB @6kHz
Angle of refl. beam (-6dB) 1/4/8 kHz	180° / 80° / 110°	180° / 80° / 110°	180° / 80° / 110°
Speaker Ø (mm) and Impedance	165 / 8 ohms, 2-way coaxial chassis		
Side dimension, Install. depth	220 (70) mm	220 (70) mm	220 (70) mm
Weight (kg), Colour	appr. 1,8; white	appr. 1,9; white	appr. 2,1; white



The square cut for the installation should have a side length of 185 mm.

- Ceiling Speaker, 10 W** 100V, white, coaxial chassis ..... **SC-110 C**
- Ceiling Speaker, 20 W** 100V, white, coaxial chassis ..... **SC-120 C**
- Ceiling Speaker, 30 W** 100V, white, coaxial chassis ..... **SC-130 C**



Installation case made of soaked chipboard, fits the speakers SC-110C and SC-120C for installation in ceilings or walls made of bricks, cement etc.  
Dimensions in mm: 233 (H) x 233 (W) x 100 (D)

**Installation Case** for SC-110/120/130 **EZ-120**

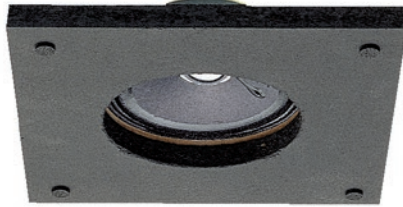
100 V

PASSIVE

ACTIVE

100V

3 power classes  
4 W – 6 W – 10 W  
sine



**Sound Panel Speaker, 4 W, with 100V-transformer..... SW-004**  
**Sound Panel Speaker, 6 W, with 100V-transformer..... SW-006**  
**Sound Panel Speaker, 10 W, with 100V-transformer..... SW-010**

3 power classes  
4 W – 6 W – 10 W  
sine



**Sound Panel Speaker, 4 W, with 100V-transformer..... SW-104**  
**Sound Panel Speaker, 6 W, with 100V-transformer..... SW-106**  
**Sound Panel Speaker, 10 W, with 100V-transformer..... SW-110**



3 power classes  
10 W – 20 W – 30 W  
sine



**Sound Panel Speaker, 10 W, with 100V-transformer..... SW-210C**  
**Sound Panel Speaker, 20 W, with 100V-transformer..... SW-220C**  
**Sound Panel Speaker, 30 W, with 100V-transformer..... SW-230C**

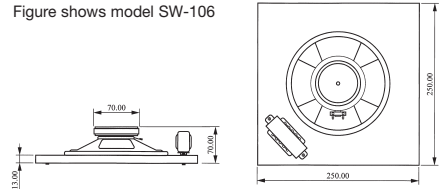
## Description

These sound panel speakers are made of 13 mm, totally blackened chipboard on which the speaker chassis and the 100 V matching transformer are fixed.

Please consider the following features:

- The models SW-004/006/010 have a “twin cone” chassis with a diameter of 130 mm, the models SW-104/106/110 with a diameter of 165 mm.
- A high-quality 2-way coaxial case with a very wide banded basic membrane, into which a separate tweeter is fitted, is used for the models SW-210C, SW-220C and SW-230C.
- The sound panel has 4 rubber naps on the bottom side. This enables for instance a vibration- or boom disturbance-free application on ceiling grills.

Figure shows model SW-106



Technical data	SW-004	SW-006	SW-010
Load rating (Music power)	4 (15) W	6 (15) W	10 (15) W
Transformer tapplings at 100V	4 / 2 / 1 W	6 / 3 / 1,5 W	10 / 5 / 2,5 W
Frequency range	110 – 16.000 Hz	110 – 17.000 Hz	90 – 20.000 Hz
Sound pressure at 1W/1m	94 dB	94 dB	94 dB
Sound pressure SPL Pmax/1m	101 dB @4kHz	104 dB @4kHz	105 dB @4kHz
Angle of refl. beam (-6dB) 1/4/8 kHz	180°/ 80°/ 50°		
Speaker Ø (mm) / Impedance	119 mm / 8 ohms		
Side dimensions, overall height	200 x 200 mm; 60 mm		
Weight (kg), Colour	1,1 – black	1,1 – black	1,1 – black

Technical data	SW-104	SW-106	SW-110
Load rating (Music power)	4 (15) W	6 (15) W	10 (15) W
Transformer tapplings at 100V	4 / 2 / 1 W	6 / 3 / 1,5 W	10 / 5 / 2,5 W
Frequency range	90 – 20.000 Hz	90 – 20.000 Hz	90 – 20.000 Hz
Sound pressure at 1W/1m	94,5 dB	95 dB	95 dB
Sound pressure SPL Pmax/1m	102dB@1,2kHz	104dB@1,2kHz	106dB@1,2kHz
Angle of refl. beam (-6dB) 1/4/8 kHz	180°/ 70°/ 50°		
Speaker Ø (mm) / Impedance	165 mm / 8 ohms		
Side dimensions, overall height	250 x 250 mm; 70 mm		
Weight (kg), Colour	1,2 – black	1,2 – black	1,3 – black

Technical data	SW-210C	SW-220C	SW-230C
Load rating (Music power)	10 (40) W	20 (40) W	30 (40) W
Transformer tapplings at 100V	10 / 5 / 2,5 W	20 / 10 / 5 W	30 / 15 / 7,5 W
Frequency range	45 – 20.000 Hz	35 – 20.000 Hz	35 – 20.000 Hz
Sound pressure at 1W/1m	92 dB	92 dB	92,5 dB
Sound pressure SPL Pmax/1m	104 dB @6kHz	106 dB @6kHz	108 dB @6kHz
Angle of refl. beam (-6dB) 1/4/8 kHz	180°/ 80°/ 110°		
Speaker Ø (mm) / Impedance	165 mm / 8 ohms, 2-way coaxial chassis		
Side dimensions, overall height	250 x 250 mm; 83 mm		
Weight (kg), Colour	1,7 – black	1,9 – black	2,1 – black

2 power classes  
**6 W – 10 W**  
sine  
with broadband chassis

2 power classes  
**10 W – 20 W**  
sine  
with coaxial chassis



100 V

PASSIVE

ACTIVE



## Description

The ceiling and wall construction speakers of the SCS series present themselves in a new, responding optic. The form adapts outstandingly to almost all premises.

Particularly in buildings, in which a suspended ceiling is not intended, the complete metal speaker is the solution. Of course it can be used due to its method of construction also as wall speakers.

If desired, it is available in all RAL colours.

Please consider the following features:

- Speaker in complete metal execution.
- Wide-band chassis for excellent speech and music reproduction.
- Simple assembling.
- Optionally in humid room version available.

★

Technical data	SCS-106	SCS-110
Load rating (Music power)	6 (15) W	10 (15) W
Transformer tapplings at 100V	6 / 3 / 1,5 W	10 / 5 / 2,5 W
Frequency range	155 – 20.000 Hz	155 – 20.000 Hz
Sound pressure at 1W/1m	95,5 dB	95,5 dB
Sound pressure SPL Pmax/1m	105 dB @8kHz	106 dB @1,2kHz
Angle of refl. beam (-6dB) 1/4/8 kHz	100° / 90° / 25°	100° / 90° / 30°
Speaker Ø (mm) / Impedance	165 mm / 8 ohms	
Dimensions Ø / Height	266 mm; 80 mm	
Weight	approx. 1,3 kg	approx. 1,3 kg

**Ceiling Speaker, 6 W** ..... **SCS-106**  
with 100V-transformer, white

**Ceiling Speaker, 10 W** ..... **SCS-110**  
with 100V-transformer, white

## Description

The models SCS-110C and SCS-120C correspond to the accompanying model series in design, mounting method and design.

They are equipped with a high-quality 2-way coaxial chassis that in reference to sound pressure and fidelity fulfills also professional requirements.

★

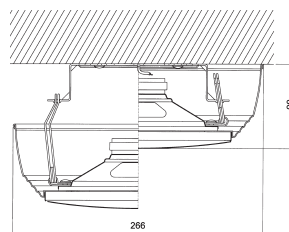


Figure shows 2-way-coaxial-chassis for the models SCS-110C and SCS-120C.

Technical data	SCS-110C	SCS-120C
Load rating (Music power)	10 (40) W	20 (40) W
Transformer tapplings at 100V	10 / 5 / 2,5 W	20 / 10 / 5 W
Frequency range	170 – 17.500 Hz	160 – 20.000 Hz
Sound pressure at 1W/1m	92 dB	92 dB
Sound pressure SPL Pmax/1m	104 dB @300Hz	107 dB @300Hz
Angle of refl. beam (-6dB) 1/4/8 kHz	110° / 60° / 44°	100° / 55° / 50°
Speaker Ø (mm) / Impedance	165 mm / 8 ohms	
Dimensions Ø / Height	266 mm; 80 mm	
Weight	approx. 1,5 kg	approx. 1,5 kg

**Ceiling Speaker, 10 W** ..... **SCS-110C**  
with 100V-transformer, white

**Ceiling Speaker, 20 W** ..... **SCS-120C**  
with 100V-transformer, white

100V

PASSIVE

ACTIVE

**15 W** Adaptations  
15 / 7,5 / 4 W



Also for outdoor mounting

**30 W** Adaptations  
30 / 15 / 7,5 W



Also for outdoor mounting



### Description

These SOUND PROJECTORS feature almost the sound pressure of a horn speaker but have a wide-band such as a dynamic speaker system. Both of them (CS-015 and CS-030) have installed a top-quality „twin-cone“-speaker chassis and a high-quality matching transformer, which are specially equipped for outdoor use.

That is why it is also ideally applicable for pretentious and professional voice and music reproduction outside, e.g. outdoor swimming pools, sports fields etc.

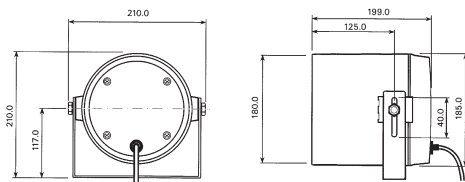
It is possible to rig up a number of these sound projectors, on top of each other, by using similar phasing of the signal connection. This effects a narrowing of the vertical transmission angle at 1/4/8 kHz, which has the same effect as a column speaker.

Of course the CS-015 and CS-030 are also able to be connected at low-impedance. It is only necessary to connect the built-in matching transformer to the appropriate wire bond).

Please consider the following features:

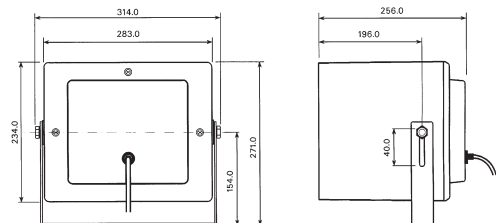
- Both models have a very attractive design and are made of a shock- and scratch-resistant plastic.
- The colour is creme white, similar to RAL 9001.
- The impedance matching is done very easily by clamping on the appropriate leads of the connection multi-core. The leads are marked appropriately and cannot be confounded.
- By simply changing the plug connections on the matching transformer, the speaker can also be used at low-impedance (8 ohms).

★



Technical data	CS-015
Load rating (Music power)	15 W (25 W)
Transformer tappings at 100V	15 / 7,5 / 4 W
Frequency range	125 – 16.000 Hz
Sound pressure at 1W/1m	96 dB
Sound pressure SPL Pmax/1m	109 dB
Speaker Ø (mm) and Impedance	5 1/4", 8 ohms
Dimensions (without bracket)	Ø 178 mm x 200 mm (L)
Weight, Colour	approx. 1,6 kg, cream white

Sound Projector, 15 W with 100V-transformer.....**CS-015**



Technical data	CS-030
Load rating (Music power)	30 W (40 W)
Transformer tappings at 100V	30 / 15 / 7,5 W
Frequency range	100 – 16.000 Hz
Sound pressure at 1W/1m	99 dB
Sound pressure SPL Pmax/1m	114 dB
Speaker Ø (mm) and Impedance	5 1/4", 8 ohms
Dimensions (without bracket)	234 x 283 x 256 mm
Weight, Colour	approx. 3,7 kg, cream white

Sound Projector, 30 W with 100V-transformer.....**CS-030**

**15 W** Adaptations  
15 / 7,5 / 4 W



Also for outdoor mounting

## Description

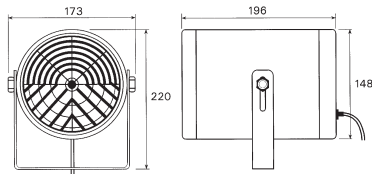
These high-quality sound projectors have been developed according to the latest knowledge in plastic technology. The sound pressure decreases nearly to the level of horn speakers. They have a high wide band, such as dynamic speakers.

Both models (CSP-115 and CSP-220) have a built-in wide range „twin-cone“ speaker chassis. Each of the integrated transformer tapings 100V, 70 V and also 50 V have respectively three power levels.

An excellent sound characteristic and the dynamic of these sound projectors gives best results for speech articulation as well as for a very good music performance.

It is possible to rig up a number of these sound projectors, on top of each other, by use of similar phasing of the signal connection. This effects a narrowing of the vertical transmission angle at 1/4/8 kHz, which has the same effect as a column speaker.

Of course the CSP-115 and CSP-220 are both able to be low-impedance connected.



Technical data	CSP-115
Load rating (Music power)	15 W (25 W)
Transformer tapings at 100V	15 / 7,5 / 4 W (also 70 V and 50 V)
Frequency range	150 – 20.000 Hz
Sound pressure at 1W/1m	94 dB
Sound pressure SPL Pmax/1m	106 dB
Speaker Ø and Nominal impedance	5,5", 8 ohms
Protection type	IP 44
Dimensions (without bracket)	148 x 196 mm
Weight, Colour	approx. 1,3 kg, white, similar RAL 9010

**Sound Projector, 15 W** with 100V-transformer..... **CSP-115**



optional

**20 W** Adaptations  
20 / 10 / 5 W

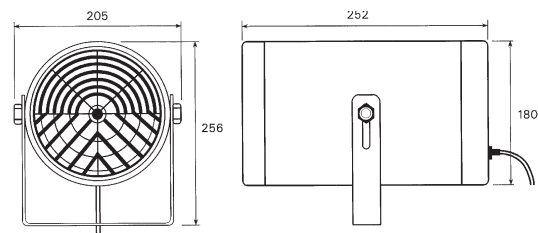


Also for outdoor mounting

Please consider the following features:

- Both models are established in an equal design, scratch-resistant and impact resistant plastic material.
- The colour of the case is white, similar to RAL 9010, the folding mounting bar is creme white, similar to RAL 9001.
- The form and interior equipment of the sound projectors is configured, so that the favoured polar pattern of the sound radiation is assured.
- The required connection or impedance mode is done with clamp insulated wires (well marked). The cable is led out at the rear side of the unit.

★



Technical data	CSP-220
Load rating (Music power)	20 W (35 W)
Transformer tapings at 100V	20 / 10 / 5 W (also 70 V and 50 V)
Frequency range	100 – 20.000 Hz
Sound pressure at 1W/1m	95 dB
Sound pressure SPL Pmax/1m	109 dB
Speaker Ø and Nominal impedance	6,5", 8 ohms
Protection type	IP 44
Dimensions (without bracket)	180 x 252 mm
Weight, Colour	approx. 2,2 kg, white, similar RAL 9010

**Sound Projector, 20 W** with 100V-transformer..... **CSP-220**

100 V

PASSIVE

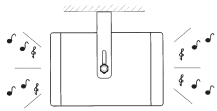
ACTIVE

100V

PASSIVE

ACTIVE

**15 W** Adaptations  
15 / 7,5 / 4 W



Also for outdoor mounting.

### Description

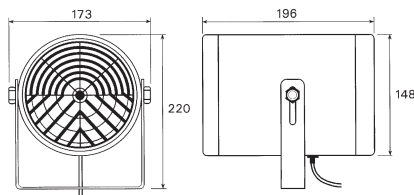
These speakers are used, where announcements or music transmissions will be radiated at the same time in opposite directions (e.g. stations, corridors, schools, hospitals etc.). It is possible to install the speakers to the wall and also to the ceiling.

These double-direction speakers were developed in the design of a sound projector and have an outstanding sound pressure.

Using a very wide-band speaker chassis and an outstanding matching transformer, these double direction speakers are both perfect for language reproduction as well as for a very good music performance.

Please consider the following features:

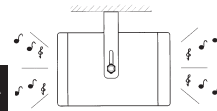
- Both models are developed in the same design and manufactured from scratch and impact resistant plastic.



Technical data	CSP-115D
Load rating (Music power)	15 W (25 W)
Transformer tapings at 100V	15 / 7,5 / 4 W (also 70 V and 50 V)
Frequency range	150 – 20.000 Hz
Sound pressure at 1W/1m	96 dB
Sound pressure SPL Pmax/1m	106 dB
Speaker Ø and Nominal impedance	5,5", 8 ohms (2x)
Protection type	IP 44
Dimensions (without bracket)	148 x 196 mm
Weight, Colour	approx. 2,3 kg, white, similar RAL 9010

**Double-Direction Speaker, 15 W .....CSP-115D**  
with 100V-transformer

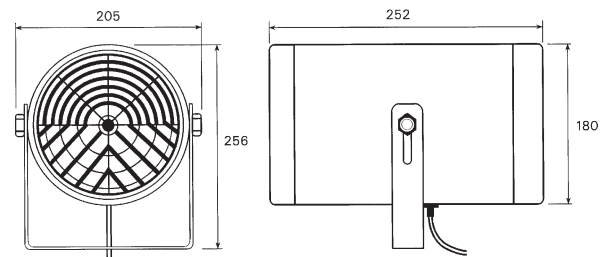
**20 W** Adaptations  
20 / 10 / 5 W



Also for outdoor mounting.

- The matching transformer is installed in the housing, to be attached to 100 V and in addition to 50 V and 70 V. The appropriate multicore cable (well marked) is led out at the bottom side of the speaker.
- The housing colour is white (similar RAL 9010), the assembly handle (hinged) is creme white (similar RAL 9001). The housing can be painted in all colours.
- With the help of the assembly handle contained in the scope of supply, the speaker can be installed in any direction.

★

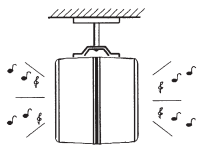


Technical data	CSP-220D
Load rating (Music power)	20 W (35 W)
Transformer tapings at 100V	20 / 10 / 5 W (also 70 V and 50 V)
Frequency range	100 – 20.000 Hz
Sound pressure at 1W/1m	96 dB
Sound pressure SPL Pmax/1m	109 dB
Speaker Ø and Nominal impedance	6,5", 8 ohms (2x)
Protection type	IP 44
Dimensions (without bracket)	180 x 252 mm
Weight, Colour	approx. 2,8 kg, white, similar RAL 9010

**Double-Direction Speaker, 20 W .....CSP-220D**  
with 100V-transformer

# DOUBLE-DIRECTION SPEAKERS

# RCS



**15 W** Adaptations  
15 / 7,5 / 4 W

**30 W** Adaptations  
30 / 15 / 7,5 W  
2-way coaxial chassis

100 V

PASSIVE

ACTIVE



Supplied with mounting bracket (for pan and tilt)

## Description

Where announcements are required simultaneously in opposite directions (railway stations, corridors, passages, schools etc.), it is of advantage to use such double direction-speakers.

The speakers can be mounted vertically to the wall or horizontally on the ceiling. The body of the speaker cabinet is made of high-quality impact and scratch resistant plastic in a very modern but attractive design.

Excellent speech and music reproduction is achieved by very wide high performance twin cone speakers, with high-quality matching transformers.

Please consider the following features:

- The cabinet has enough space for applying relays or other electronic devices.
- The housing is made of impact and scratch resistant plastic.
- A complete mounting bracket, which allows a pan, tilt and thief-proof mounting.

Technical data	BC-215
Load rating (Music power)	15 W (2 x 7,5 W), max. 25 W low-imp.
Transformer tapplings at 100V	15 / 7,5 / 4 W
Frequency range	80 – 15.000 Hz
Sound pressure 1 W/1 m	93 dB (2x)
Sound pressure SPL Pmax	107 dB @5200Hz (2x)
Speaker (twin cone)	165 mm/8 ohms (2x)
Dimensions (H x W x D)	250 x 200 x 175 mm
Weight	approx. 2,9 kg
Colour corpus/grille, Material	alpine/white – plastic/steel

**Double-Direction Speaker, 15 W** (2 x 7,5 W), 100V . . . . . **BC-215**

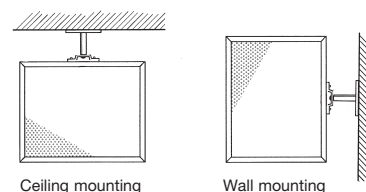


2-way-coaxial-chassis

The model BC-230 C is exactly the same in design and mounting as the speaker described on the left side of this page.

This model (BC-230C) includes 2 high performance Hi-Fi 2-way-coaxial speakers. A separate tweeter is integrated into the basis diaphragm. This coaxial speaker is also suitable for professional performance in sound pressure and sound quality.

The matching transformer is in accordance to the highest quality standard.



Technical data	BC-230 C
Load rating (Music power)	30 W (2 x 15 W), max. 80 W low-imp.
Transformer tapplings at 100V	30 / 15 / 7,5 W
Frequency range	50 – 20.000 Hz
Sound pressure 1 W/1 m	91 dB (2x)
Sound pressure SPL Pmax	108 dB @6100Hz (2x)
Speaker Ø / Impedance	165 mm / 8 ohms (2x) 2-way coaxial chassis
Dimensions (H x W x D)	250 x 200 x 175 mm
Weight	approx. 3,9 kg
Colour corpus/grille, Material	alpine/white – plastic/steel

**Double-Direction Speaker, 30 W** (2 x 15 W), 100V . . . **BC-230 C**  
with 2-way coaxial chassis, white

100V

PASSIVE

ACTIVE

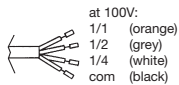
2 power classes  
**10 W – 20 W**  
sine



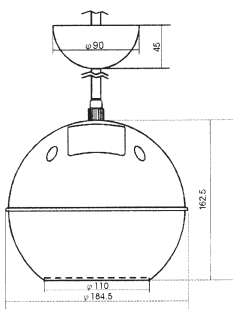
### Description

The ball speakers KL-510/520 are made of high-quality impact and scratch resistant plastic and are splash water proof. Its surface can be painted in all colours. The ball speakers are very efficient where low hanging speakers are required, for example rooms with high ceilings.

Please consider the following features:



- Perfect playback quality is ensured by a wide banded and powerful speaker case.
- The high-quality matching transformer is designed for 100V and 70 V. It can also be connected to 1/1 – 1/2 – 1/4 performance and low-impedance (8 ohms), the cable conductors are marked.
- The installation is burgle proof. The speaker suspension can be adjusted up to 5m.



★

Supplied with: connection cable 5m, 1 ceiling canopy.

Technical data	KL-510	KL-520
Load rating (Music power)	10 W (15 W)	20 W (30 W)
Transformer tappings at 100V	10 / 5 / 2,5 W	20 / 10 / 5 W
Frequency range	140 – 14.500 Hz	140 – 14.500 Hz
Sound pressure at 1W/1m	95 dB	95,5 dB
Sound pressure SPL Pmax/1m	106 dB @1,5kHz	109 dB @1,5kHz
Angle of refl. beam (-6dB) 1/4/8 kHz	180° / 50° / 30°	180° / 50° / 30°
Speaker Ø (mm) and Impedance	125 mm / 8 ohms	
Dimensions Ø x H (mm)	184,5 x 162,5 mm	
Weight, Colour	approx. 1,7 kg, white	approx. 1,8 kg, white

**Ball Speaker, 10 W** ..... **KL-510**  
white, with 100V-transformer

**Ball Speaker, 20 W** ..... **KL-520**  
white, with 100V-transformer

2 power classes  
**20 W – 30 W**  
sine

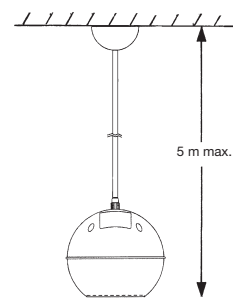
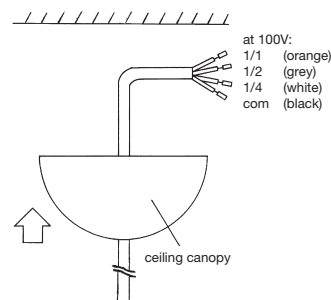


### Description

The model KL-620/630 is made of impact and scratch resistant, white plastic in a very attractive but understated design. Its surface can be painted in all colours. This attractive speaker is suitable for high ceilings where low hanging speakers are required.

Please consider the following features:

- A very wide banded and powerful “twin cone” case allows superb reproduction quality.
- The fitted high-quality 100V matching transformer prevents every loss of perfect hearing quality.
- Burgle proof installation and up to 5 m adjustable suspension.



Supplied with: connection cable 5 m, ceiling canopy.

Technical data	KL-620	KL-630
Load rating (Music power)	20 W (30 W)	30 W (40 W)
Transformer tappings at 100V	20 / 10 / 5 W	30 / 15 / 7,5 W
Frequency range	120 – 20.000 Hz	120 – 20.000 Hz
Sound pressure at 1W/1m	97 dB	97,5 dB
Sound pressure SPL Pmax/1m	111 dB @2kHz	113 dB @11kHz
Angle of refl. beam (-6dB) 1/4/8 kHz	130° / 50° / 30°	130° / 50° / 30°
Speaker Ø (mm) and Impedance	165mm / 8 ohms	
Dimensions Ø x H (mm)	265 x 232,5 mm	
Weight, Colour	approx. 2,2 kg, white	approx. 2,2 kg, white

**Ball Speaker, 20 W** ..... **KL-620**  
white, with 100V-transformer

**Ball Speaker, 30 W** ..... **KL-630**  
white, with 100V-transformer

# 2-WAY BALL SPEAKERS

# RCS

**20 W** Adaptions  
20 / 10 / 5 W  
2-way-coaxial-chassis

100 V

PASSIVE

ACTIVE



## Description

These attractive ball speaker not only impress with their extraordinary design but also by a great sound. They are used in buildings with high ceilings and can then be taken down up to 5 meters.

Please consider the following features:

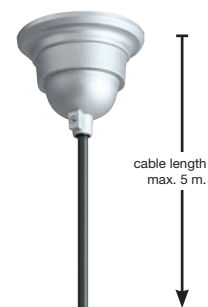
- These ball speakers are available in white (**W**) and black (**S**)
- Burgle proof installation and up to 5 m adjustable suspension.
- They are equipped with a high-quality 2-way coaxial chassis that in reference to sound pressure and fidelity fulfills also professional requirements.

with professional 2-way-coaxial-chassis



- The fitted high-quality 100V, 20 W matching transformer prevents every loss of perfect hearing quality.
- Various connection options allow you to adjust the cable at full, half or quarter power.

★



Technical data	KLC-200 W/S
Load rating (Music power)	20 (30) W
Transformer tapings at 100V	20 / 10 / 5 W
Frequency range	120 – 16.000 Hz
Sound pressure at 1W/1m	96 dB
Sound pressure SPL Pmax/1m	109 dB
Angle of refl. beam (-6dB) 1/4/8 kHz	190°
Speaker Ø (mm) and Impedance	165mm / 8 ohms 2-way-coaxial-chassis
Dimensions Ø x H (mm)	210 mm
Weight, Colour	approx. 1,8 kg; white, black

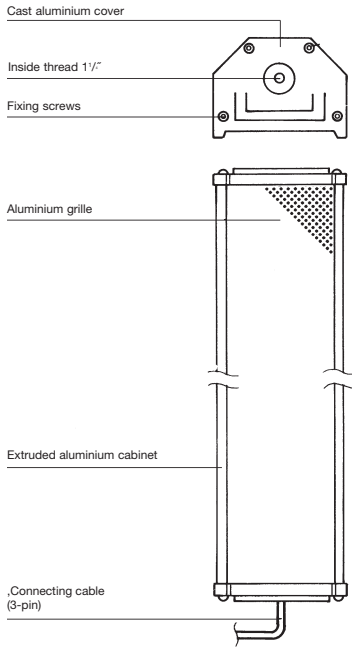
## Model designations

- Ball Speaker, white** ..... **KL-200 W**  
with 100V-transformer, 20 W
- Ball Speaker, black** ..... **KL-200 S**  
with 100V-transformer, 20 W

100V



The lobe-shaped sound dispersion characteristic enables excellent coverage of large areas with a relatively small number of column speakers.



### Floor Stand



Stable, very robust floor stand enables the set up of the LA speaker series. The stand is made of airplane aluminum, weighs only 3.2 kg and is stepless variable in height by 110 - 200 cm. The centric maximum carrying capacity amounts to approx. 60 kg

Floor Stand ..... **LST-101**

For indoor and outdoor mounting



LA-160 (60/90 W)



LA-140 (40/60 W)



LA-130 (30/45 W)



LA-120 (20/30 W)

### Description

This column speakers series is very strong and sturdily constructed. They are made of extruded aluminium with cast aluminium top and bottom covers. The aluminium grille is stove enamelled. The columns are weather- and dust-proof and are very suitable for outdoor use, e. g. open-air theatres, stadiums and public parks

- All column speakers in this series are equipped with matching transformers for half and full power use.
- Because of their trapeze-shape, these speakers are very space saving and also suitable for corner installment.
- Supplied as standard with each of these speakers. Is complete swivel and tilt wall mounting kit.

Technical data	LA-120	LA-130	LA-140	LA-160
Load rating (Music power)	20 W (30 W)	30 W (45 W)	40 W (60 W)	60 W (90 W)
Transformer tapings at 100V	10 W – 20 W	15 W – 30 W	20 W – 40 W	30 W – 60 W
Frequency range (Hz)	60 – 15.000 Hz	60 – 15.000 Hz	60 – 15.000 Hz	60 – 15.000 Hz
Sound pressure SPL Pmax/1m	110 dB	113 dB	116 dB	118 dB
Speaker, installed	2 units	3 units	4 units	6 units
Dimensions, HxWxD (mm)	330 x 147 x 110 mm	385 x 147 x 110 mm	575 x 147 x 110 mm	830 x 147 x 110 mm
Weight	approx. 3,5 kg	approx. 4,5 kg	5,5 kg	6,0 kg
Colour	silver met./black			

Column Speakers, 20 W, (100V), aluminium ..... **LA-120**  
 Column Speakers, 30 W, (100V), aluminium ..... **LA-130**  
 Column Speakers, 40 W, (100V), aluminium ..... **LA-140**  
 Column Speakers, 60 W, (100V), aluminium ..... **LA-160**

# 2-WAY COLUMN SPEAKERS

Floor Stand  
LST-102

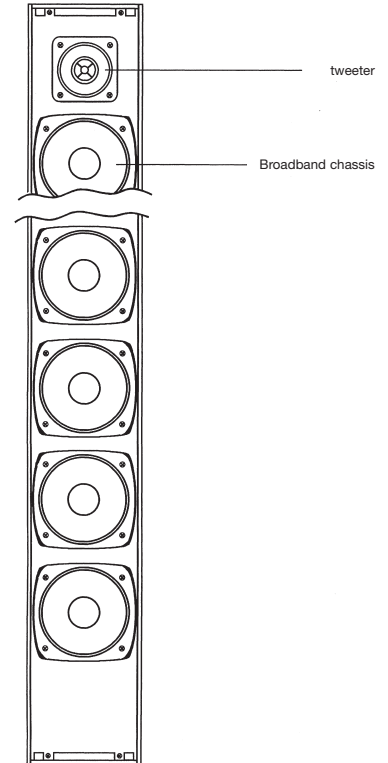
# RCS



100 V

PASSIVE

ACTIVE

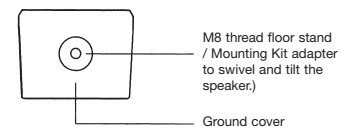


## Description

The series LS-300 column speakers are made of sturdy, stove-enamelled sheet steel, the both covers of high firms plastic.

This modern, very wide-range, high-performance speaker combined with the tweeter provides an excellent speech and music reproduction.

- All column speakers in this series are equipped with a 100V transformer, which provides two possible power taps.
- The loudspeakers have a low impedance 8 ohm power tap.
- The grill is easily removed. It is easy to handle the impedance- and „low-cut“ selector switches. The speaker can be either used in- or outdoors. The scope of delivery contains a mounting set, for pan and tilt.



This very robust base plate is in the scope of LST-102 supply. It replaces the lid on the speaker column.

Technical data	LS-320 W	LS-330 W	LS-340 W	LS-360 W
Load rating (Music power)	20 W (30 W)	30 W (45 W)	40 W (60 W)	60 W (90 W)
Tappings at 100V	20-10W - 8 ohms	30-15W - 8 ohms	40-20W - 8 ohms	60-40W - 8 ohms
Freq. range and „Low-Cut“-switch	250-15.000 Hz	250-15.000 Hz	250-15.000 Hz	250-15.000 Hz
Sound press. 1 W/1 m - SPL Pmax/1m	89 - 105 dB	90 - 107 dB	92 - 109 dB	93 - 112 dB
Speakers, installed	2 units + 1 Tweeter	3 units + 1 Tweeter	4 units + 1 Tweeter	6 units + 1 Tweeter
Dimensions (HxWxD)	368 x 90 x 85 mm	478 x 90 x 85 mm	568 x 90 x 85 mm	768 x 90 x 85 mm
Weight	approx. 2,2 kg	approx. 2,5 kg	approx. 4,2 kg	approx. 5,5 kg
Colour	similar RAL 9016			

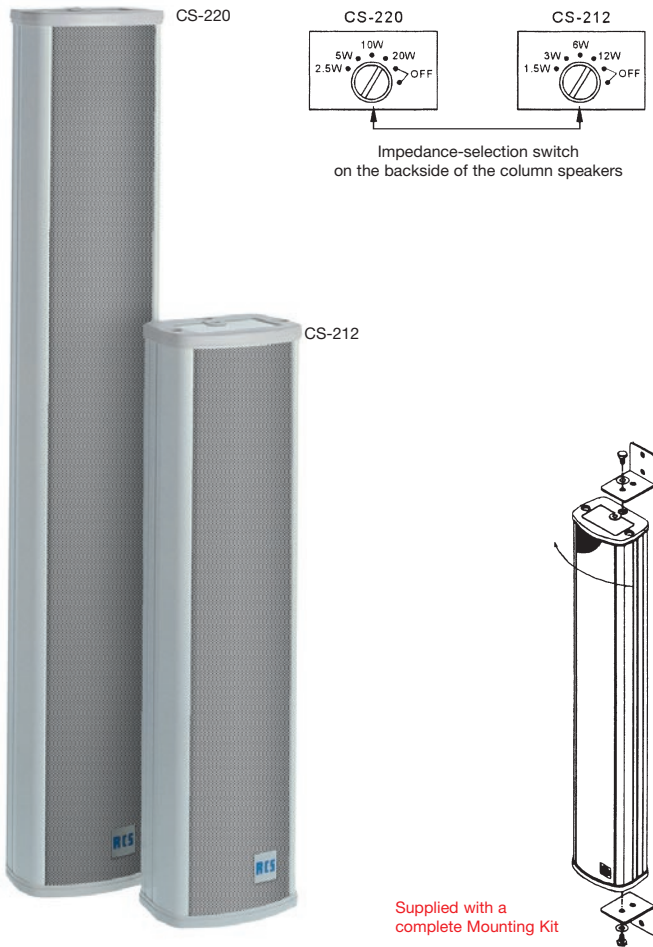
**Column Speaker, 20/30 W, 2-way, white. . . . . LS-320 W**  
**Column Speaker, 30/45 W, 2-way, white. . . . . LS-330 W**  
**Column Speaker, 40/60 W, 2-way, white. . . . . LS-340 W**

**Column Speaker, 60/90 W, 2-way, white. . . . . LS-360 W**  
**Floor Stand, suitable for LS column series. . . . . LST-102**

100V

PASSIVE

ACTIVE



### Description

These Column Speakers come in a very elegant design, extremely slim, so that they adapt outstandingly to every architecture (e.g. in churches etc.). The housing is of aluminium, the top and bottom of high-quality plastic. The grille is made of steel. The speaker-chassis, along with a high quality audio frequency transformer, ensures very good acoustic pressure and best playback quality.

- On the back of this column speaker is an internal impedance-selector switch.
- The column speaker can be connected with 100 – 70 – 25V respectively with 1/1 – 1/2 – 1/4 performance.

Technical data	CS-212	CS-220
Load rating (Music power)	12 W (18 W)	20 W (30 W)
Transformer tapings	12 – 6 / 3 / 1,5 W	20 – 10 / 5 / 2,5 W
Frequency range	100 – 15.000 Hz	100 – 15.000 Hz
Sound pressure at 1W/1m	92 dB	93 dB
Sound pressure SPL Pmax/1m	103 dB	106 dB
Speakers, installed	4 units Ø 70 mm	7 units Ø 70 mm
Dimensions (HxWxD)	405 x 106 x 75 mm	620 x 106 x 75 mm
Weight	approx. 2,2 kg	approx. 3,6 kg
Colour	similar RAL 9010	

**Column Speaker, 12 W (100V), aluminium** ..... **CS-212**  
**Column Speaker, 20 W (100V), aluminium** ..... **CS-220**



### WIDE RANGE SPEAKER

For outdoor and indoor assembly



### Description

This speaker combines the weather resistance and the sound pressure of a horn speaker with the wide-band tone quality of a dynamic speaker.

It is ideal for performances outside or in baths etc., when excellent speech and good music quality is required.

The speaker is available both with 100V-transformer and in a low impedance version (8 ohms).

Please consider the following features:

- Broadband chassis for optimal music and speech transmission.
- Weatherproof, therefore suitable for outdoor application.
- Easy to install, tiltable.

Technical data	WSL-015	WSH-115
Load rating	15 W	15 W
Nominal impedance	8 ohms	8 ohms
Transformer tapings at 100V	–	15–10–5–3 W
Frequency range	170 – 25.000 Hz	170 – 25.000 Hz
Sound pressure at 1W/1m	102 dB	102 dB
Sound pressure SPL Pmax/1m	115 dB @6,5kHz	115 dB @6,5kHz
Angle of refl. beam (-6dB) 1/4/8 kHz	130°/ 35°/ 25°	
Material	high qual. plastic	
Dimensions (Ø x T)	220 x 141 mm	
Weight, Colour	approx. 1,3 kg – grey	

**Wide Horn Speaker 15 W, grey** ..... **WSL-015**  
**Wide Horn Speaker 15 W, grey (100V)** ..... **WSH-115**



100 V

PASSIVE

ACTIVE



max. 50 W

SPEECH & MUSIC

## Description

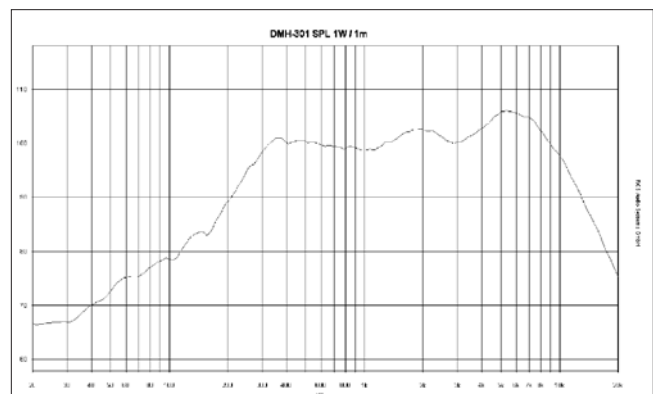
The new music horn speaker DMH-301 combines sound pressure and weatherproof of a horn speaker with the excellent sound of a 2-way-system. It is particularly suitable for applications, where apart from speech also a high-quality music performance is required.

The weatherproof construction (protection type IP-66) allows the permanent use outdoors. Therefore the range of application possibilities is greatly extended.

Please consider the following features:

- The housing is made of impact proof ABS-plastic and can be painted in all RAL colours on option.
- 100V-transformers are used, enabling various tappings.
- The music horn contains 2 separate driver units, one for the low and one for the high frequency range
- The mounting bracket is tiltable – so the music horn speaker is optimally suited for wall- or ceiling mounting.

★



Technical data	DMH-301
Load rating (Music power)	30 W (45 W)
Nominal impedance:	8 ohms
Transformer tappings at 100 V	30 / 15 / 7,5 W
Frequency range	240 – 11.500 Hz
SPL at 1 W/1 m	101 dB
Sound pressure SPL Pmax/1m	120,8 dB @ 5340 Hz
Angle of reflected beam (-6dB, 1/2/8 kHz)	60°/50°/30°
Protection type	IP 66
Dimensions without mounting bar (H x W x D)	330 mm x 412 mm x 445 mm
Weight	approx. 5,7 kg
Material, Colour	ABS plastic, light-grey

- 100V
- PASSIVE
- ACTIVE

## 10 W



**Horn Speaker, with 100V-transformer** ..... **DH-110S**

## 15 W



**Horn Speaker, with 100V-transformer** ..... **DH-115S**

## 30 W



**Horn Speaker, with 100V-transformer** ..... **DH-130S**

### Description

Very stable and attractive horn speaker with integrated 100V matching transformer. This series is of high-quality plastic and therefore shock- and scratch-resistant.

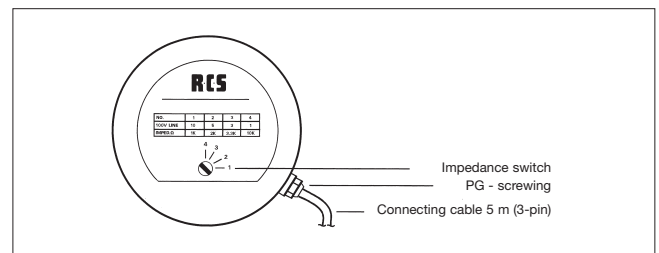
The understated colouring, a industry-grey tone, blends in very well with the surroundings. Of course it is also possible to paint these horn speakers in all RAL colours.

The mounting bar is completely tiltable and therefore very easy to fit.

Please consider the following features:

- The complete construction of the horn speakers series has the ultimate protection grade, IP 66.
- The 3-pin connection cable (flexible hose line) is led through a waterproof PG-screw joint.
- The 6-step impedance is switchable with a screwdriver at the rear side of the unit.
- The horn speaker system is constructed to give an outstanding high sound pressure and best sound quality reproduction. The sound pressure is dependent on the different models and the particular impedance change-over.

★



Technical data	DH-110 S	DH-115 S	DH-130 S
Load rating	15/10 W	25/15 W	40/30 W
Nominal impedance	8 ohms	8 ohms	8 ohms
Transformer tapings at 100V	10 / 5 / 3 / 1 W	15 / 10 / 5 / 3 W	30/15/10/5/3 W
SPL at 1 W/ 1m	103 dB	105 dB	107 dB
SPL Pmax/1m	113 dB@1574Hz	117 dB@1130Hz	123 dB@1409Hz
Frequency range	350 – 6.000 Hz	300 – 6.000 Hz	250 – 6.000 Hz
Protection type	IP 66		
Weight	approx. 1,3 kg	approx. 1,5 kg	approx. 2,5 kg
Colour and Material	grey, plastic		
Dimensions, HxWxL (mm)	150 x 175 x 180	180 x 225 x 230	220 x 290 x 265

# HORN SPEAKERS (with 100V-transformer)



## Description

Very stable and attractive horn speaker with integrated 100V matching transformer with the grade „HEAVY DUTY“. In spite of its stability this speaker series has a very modern and appealing appearance. The back side cover, in which also the matching transformer is installed, is made of scratch- and impact resistant plastic. The horn is made of solid aluminium and the mounting of enamelled steel.

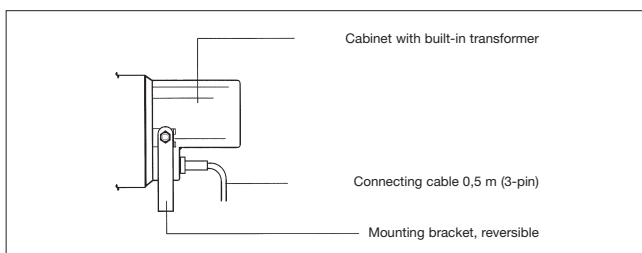
The very technical colouring (dark-metallic and black) points out the professionalism of this speaker series. Of course it is also possible to paint this equipment in each RAL colour (number) according to the architects requirement.

The mounting bracket is fully tiltable and also very easy to mount.

Please consider the following features:

- The complete construction of this horn speaker series has the highest protection type, IP 66.
- The 3-pin connection cable (flexible hose line) is waterproof.
- Changing the impedance matching is done by clamping on the appropriate labelled cable-leads, onto either 1/1 or 1/2 performance.
- The Horn-Speaker-Systems are constructed for superlative sound pressure and provide an amazingly good Frequency range.

★



Technical data	DH-125HD	DH-135 HD	DH-150 HD
Load rating	35/25 W	50/35 W	60/50 W
Nominal impedance	8 ohms	8 ohms	8 ohms
Transformer tappings at 100V	25 – 15 W	35 – 25 W	50 – 35 W
SPL at 1 W/1 m	107 dB	109 dB	110 dB
SPL Pmax/1m	124 dB	125 dB	126 dB
Frequency range	200 – 6.500 Hz	200 – 6.500 Hz	200 – 6.500 Hz
Protection type	IP 66		
Weight	approx. 2,5 kg	approx. 3,0 kg	approx. 3,5 kg
Colour and Material	black, plastic/Alu		
Dimensions (mm)	Ø 245 x L 285	Ø 280 x L 300	Ø 340 x L 360

Heavy Duty

25 W



Horn Speaker, with 100V-transformer ..... **DH-125HD**

Heavy Duty

35 W



Horn Speaker, with 100V-transformer ..... **DH-135HD**

Heavy Duty

50 W



Horn Speaker, with 100V-transformer ..... **DH-150HD**

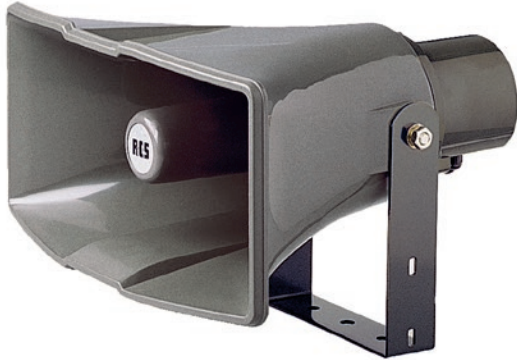
100 V

PASSIVE

ACTIVE

- 100V
- PASSIVE
- ACTIVE

## 35 W



Technical data	DH-125F	DH-135F
Load rating	25 W	35 W
Nominal impedance	16 ohms	
Frequency range (±10dB)	180 – 8.000 Hz	
Transf. tappings at 100V	25 / 15 / 7,5 W	35 / 17,5 / 10 W
SPL at 1 W/1m	107 dB	108 dB
SPL Pmax/1m	123 dB	125 dB
Protection type	IP-66	
Dimensions (WxHxD)/Weight	220 x 400 x 408 mm; approx. 3,7 kg	
Colour, Material	olive-grey, plastic	

### Description

Very stable and attractive horn speakers with integrated 100V matching transformer. They are made of high-quality plastic and therefore impact- and scratch-resistant.

The pleasant colours blend in very well with the surroundings. Of course it is also possible to paint these appliances in each RAL colour (number) according to the architects requirements.

The mounting bracket is fully tiltable and also very easy to mount.

Please consider the following features:

- The complete construction of this horn speaker series has the highest protection type, IP 66.
- The 4-pin connection cable (flexible hose line) is waterproof.
- The impedance matching is done by clamping on the appropriate labelled cable-leads.
- The horn system is designed for outstanding sound pressure. The sound pressure is dependent on the different models and the particular adjustment.

**Horn Speaker, with 100V-transformer .....DH-135F**

## 30 W



Technical data	DL-030F
Load rating	30 W (max. 40 W)
Impedance	16 ohms
Protection type	IP 66
Cable connection	2-pin, 50 cm
SPL Pmax/1m	125 dB
Frequency range	250 – 6.500 Hz
Colour and Material	grey/darkgrey, plastic
Dimensions and Weight	220 x 400 x 356 mm; 3,3 kg

### Description

Voluminous horn speaker with high performance and very good frequency range. The construction is extremely stable and weather-proof. All parts except bar and system are made of plastic material.

The pleasant colours blend in very well with the surroundings. Of course it is also possible to paint these appliances in each RAL colour (number) according to the architects requirements.

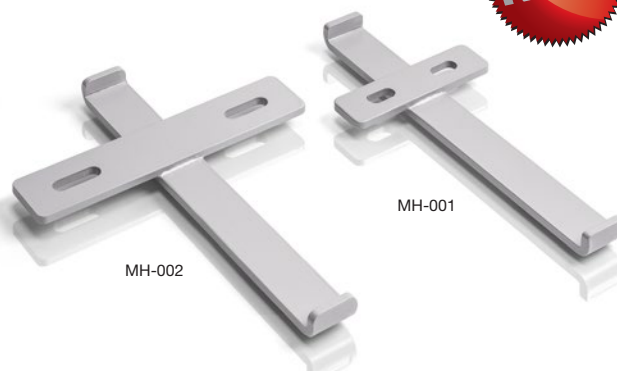
The mounting bracket is fully tiltable and also very easy to mount.

Please consider the following features:

- The complete construction of this horn speaker series has the highest protection type, IP 66.
- The horn system is designed for outstanding sound pressure. The sound pressure is dependent on the different models and the particular adjustment.

**Horn Speaker .....DL-030F**

**15W** Adaptions  
15-7,5-3,75-1,9 W



## Description

The horn speaker DH-115A has a very wide frequency range, which combined with the high sound pressure even with long distances for optimum speech intelligibility.

The housing of the DH-115A is made of impact-resistant ABS plastic in the color light gray RAL 7035, the fully reversible U-mounting bracket is made of stainless steel.

With the embedded impedance selector switch on the back four 100V adaptions and a low-impedance adaptation can be selected.

The base impedance of the DH-115A is 16 ohms. With this feature, this horn speaker is in addition to the usual 100V applications also suitable for use in intercom systems.

Please consider the following features:

- High reliability due to protection class IP66. Waterproof introducing the connecting cable through PG screwing.
- High quality design with stainless steel mounting bracket.
- 4 Adjustments in the 100V operation available.

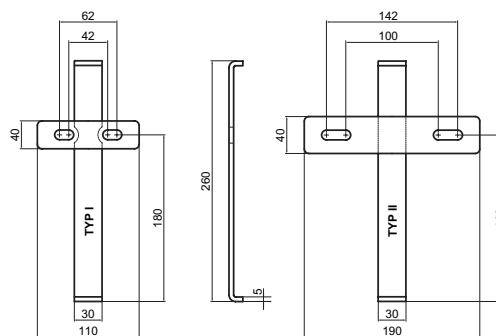
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Technical data	DH-115 A
Load rating	20/15 W
Impedance	16 ohms
Adaptions at 100V	15 / 7,5 / 3,75 / 1,9 W
Frequency range	400 - 9.000 Hz
Sound pressure 1 W/1 m	107 dB
Protection Type DIN 40050	IP 66
Weight	2,0 kg
Colour and Material	grey, plastic
Dimensions	Ø 206 x L 272 mm

**Horn Speaker, 15 W** ..... **DH-115A**  
with 100V-transformer

## Description

The powder-coated mast holders made of flat steel are used to fasten loudspeakers to round tube columns or masts. With a suitable strap (not included), the speakers can be attached to masts of different diameters.



★

In the following table you will find the matching mast holder model for the respective speaker types:

Speaker	Hole spacing	Screw	Type	Model
CS-015	102	M10	II	MH-002
CS-030	102	M10	II	MH-002
CS-6HT60 BS	140	M10	II	MH-002
CSP-115	102	M10	II	MH-002
CSP-220	100	M10	II	MH-002
DH-110S	50	M8	I	MH-001
DH-115	50	M8	I	MH-001
DH-115A	60	M8	I	MH-001
DH-125HD	60	M8	I	MH-001
DH-130	50	M8	I	MH-001
DH-135HD	60	M8	I	MH-001
DH-150HD	44,5	M8	I	MH-001
DMH-301	140	M10	II	MH-002
PHS-81-T30 BS	60	M6	I	MH-001
SPJ-53WHBS	94	M6 / M8	II	MH-002

## Model designations

**Mast holder - Type I**, for hole spacing 42-62 mm ..... **MH-001**  
**Mast holder - Type II**, for hole spacing 100-142 mm ..... **MH-002**

100V



PASSIVE

ACTIVE



Rear view active speaker



## Description

This universally usable active loudspeaker system is especially well suited for multimedia applications, monitoring, conference rooms, educational institutions and similar areas.

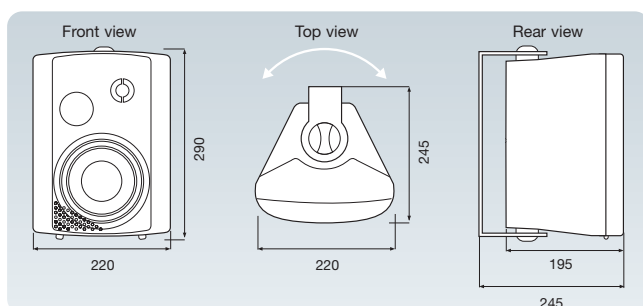
One PBA-040W set consists of a self-powered pair of stereo speakers including mounting brackets and connection cables

Please consider the following features:

- Digital stereo power amp module mounted into one box, the second box is designed as a passive slave, therefore only one power cable and one line level cable to the powered box are necessary.
- Sturdy housing made of ABS plastic with metal front grille and metal mounting bracket in white colour.
- Class D stereo power amp module with 2x 25 RMS at 8 ohms.

- Swivel mounting bracket and trapezoidal box shape allow versatile mounting in horizontal or vertical orientation on walls or under the ceiling.

★



Technical data	PBA-040W
Load rating	2 x 40/25 W
Input sensitivity	-10 dBu / 10 kohms
Speaker type	active speaker pair 2-Way bass reflex; left Box with amplifier unit, right Box passive
Speaker	6" woofer, 1,5" tweeter
Amplifier unit	Volume controller on rear side; Signal LED for L and R on rear side; Automatic switch, delay switch-off
Frequency range	20 – 20.000 Hz / 1W, ±0.5dB
Treble control	±10dB
Bass control	±10dB
Spl 1w / 1m	92,9dB
Signal-to-noise ration	>95dB
Connections	Input cinch (stereo); jack 3,5 mm (stereo) or screw-type connectors L / R each 3-pin (bal.); Connection of left/right Box via 2-pin screw-type connectors
Power supply	AC 230 V, 50 / 60 Hz; IEC socket with included IEC power cable 1m
Dimensions H x W x D (mm)	290 x 220 x 245 mm
Weight (kg), Colour	10,1 kg (pair); white

## Model designation

**Active-Speaker-System, 2x 25 W ..... PBA-040W**  
 Stereo speaker incl. mounting bracket

# ACTIVE CEILING SPEAKER SYSTEM

# RCS



100 V

PASSI

ACTIVE



## Description

The new active speaker system RCA-220C allows a very high-quality, especially low-priced 2-way PA. Set consists of 2 coaxial ceiling speaker and an amplifier module with a power range of 2x 20 W. The used stereo amplifier is performed in Class-D technology.

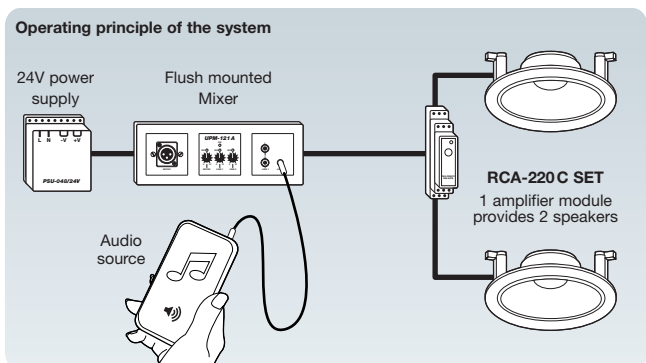
The performance amplifying made directly at the speaker. This guarantees in all frequency ranges high dynamics and reproduction quality and fidelity without distortion.

The optionally available mixer UPM-121A completes the set. With this mixer all signals can be fed, for example, or laptops, CD / MP3 players mobile phones.

Please consider the following features:

- Cost effective solution, ideal for schools and presentation rooms.
- Loudspeaker cabinets in all RAL colors available on request.
- Easy installation and installation costs.

★



Technical data	RCA-220 C
Output power at 24V	2x 20/10 W
Frequency range -3dB	45 – 20.000 Hz
Audio inputs	unbalanced
Protection circuits	thermal, short circuit, reverse polarity
Rotary switch (4 gain stages)	20dB, 26dB, 32dB, 36dB
Input level	0dB, -6dB, -12dB, -16dB
Operating voltage	10-28 V
Current consumption at 24V/max.	45mA/2A
Connections	screw terminals up to 2,5 mm <sup>2</sup>
Speaker Ø and Impedance	165 / 8 ohms, 2-way coaxial chassis
Dimensions / installation depth	Ø 226 mm, 100 mm
Hole cutout	Ø 200 mm

## Model designations

**Active-Speaker-Set, 2x 20/10W** ..... **RCA-220 C**  
 2 Ceiling speakers with integrated amplifier module

Accessories:

**3-Channel Flush-Mounting Mixer** ..... **UPM-121 A**  
**Power Supply, 24V** ..... **PSU-048/24**

100V

PASSIVE

ACTIVE



**20W** Adaptions  
20 / 10 / 5 W

**40W** Adaptions  
40 / 20 / 10 W



### Description

The new **XORVA ›S** series is designed for indoor use. It offers three alternative models (passive, 100 V and active) in two performance classes each. This speaker series is characterized by the handy and inconspicuous design.

The compact housing speakers can be attached in any corner thanks to their oval characteristics.

In addition, the pivoting, tilting and rotating mounting bracket allows easy alignment of the speaker on the wall. The new compact loudspeaker series meets all requirements for restaurants, presentations, classrooms, and much more.



Please consider the following features:

- Available in 3 different versions (passive, 100 V and active).
- The high-quality, shapely oval plastic housing ensures perfect boom and swing freedom.
- Supplied with swiveling and tiltable metal wall bracket.
- Designed for indoor installation in restaurants, presentation rooms, schools, and more.
- The powerful 3" broadband chassis provides a nice and quiet sound with good speech audibility.

Technical data	XSS-020	XSS-020 T	XSS-020 A
Type	PASSIVE	100V	ACTIVE
Nominal load capacity (program)	20 (40) W	20 (40) W	20 (40) W
Adjustments at 100V	-	20 - 10 - 5 W	-
Inputs	Clamp L/R		Cinch L/R, 6.3 Jack (in/out)
Impedance	6 ohms	6 ohms	4 ohms
Frequency range (±10dB)	132 - 20.000 Hz		
Sound pressure at 1W/1m	85 dB (±3dB)		
Sound pressure SPL Pmax/1m	100 dB (±3dB)		
Beam angle (-6dB) 1/2/4 kHz	110°/65°/55°		
Speaker Ø	77 mm, Tweeter 20,4 mm		
External dimensions (HxWxD)	175x115x107 mm		
Colour / Weight	white; 800 g	white; 1,2kg	white; 1,3kg

### Model designation

- Xorva ›S** Speaker, 20W ..... **XSS-020**  
passive speaker, 6 ohms, with mounting bracket
- Xorva ›S** Speaker, 20W ..... **XSS-020 T**  
with 100V-transformer, with mounting bracket
- Xorva ›S** Speaker, 20W ..... **XSS-020 A**  
active speaker, 4 ohms, with mounting bracket

Technical data	XSS-040 T	XSS-040 A
Type	100V	ACTIVE
Nominal load capacity (program)	40 (50) W	40 (50) W
Adjustments at 100V	40 - 20 - 10 W	-
Inputs	Clamp L/R	Cinch L/R, 6.3 Jack (in/out)
Impedance	6 ohms	4 ohms
Frequency range (±10dB)	76 - 18.000 Hz	
Sound pressure at 1W/1m	90 dB (±3dB)	
Sound pressure SPL Pmax/1m	108 dB (±3dB)	
Beam angle (-6dB) 1/2/4 kHz	115°/55°/35°	
Speaker Ø	106 mm, Tweeter 25,4 mm	
External dimensions (HxWxD)	206x140x136 mm	
Colour / Weight	white; 2,3 kg	white; 2,4 kg

### Model designation

- Xorva ›S** Speaker, 40W ..... **XSS-040 T**  
with 100V-transformer, with mounting bracket
- Xorva ›S** Speaker, 40W ..... **XSS-040 A**  
active speaker, 4 ohms, with mounting bracket

# OUTDOOR-SPEAKER

# RCS

in 3 Power classes  
**50 W – 100 W – 200 W**  
 sinus

for outdoor and indoor mounting



100 V

PASSI

ACTIVE



## Description

The new outdoor loudspeakers of the ODS series have been specially developed for outdoor use. The classic, elegant housing is made of high quality plastic and is weatherproof. The perforated plate is made of sturdy, stove enamelled aluminium.

Due to the plastic housing and the high sound pressure, the speakers can be used in wind and weather. They can be mounted both indoors and outdoors.

The speakers are equipped with high-quality 100 V transformers, which can be adjusted to 1/1 - 1/2 performance. The ODS series is equipped with a broadband chassis and an additional tweeter, which results in the best sound quality for both speech and music.

Please consider the following features:

- Depending on the version, 1, 2 or 5 high-quality loudspeaker chassis with 100 V transformer are installed in the housing.
- Swivelling wall bracket is included.
- The outdoor speakers are adjustable to 1/1 and 1/2 power.
- High-quality fiberglass composite housing with stove-enamelled perforated plate.
- Very good frequency range with optimal sound pressure.
- If desired, the loudspeakers (when ordered) can be also delivered in special colours.

★

Technical data	ODS-050	ODS-100	ODS-200
Nominal load capacity (program)	50 (75) W	100 (150) W	200 (300) W
Adjustments at 100V	50 – 25 W	100 – 50 W	200 – 100 W
Frequency range (±10dB)	50 – 18.000 Hz	50 – 18.000 Hz	50 – 18.000 Hz
Sound pressure at 1W/1m	93 dB	93 dB	120 dB
Sound pressure SPL Pmax/1m	110 dB	115 dB	121 dB
Beam angle (H x V)	90° x 90°	120° x 60°	120° x 30°
Speaker Ø	1x 5" + Tweeter	2x 5" + Tweeter	5x 5" + Tweeter
External dimensions (HxWxD)	290x195x190	560x195x210	1010x195x210
Colour / Weight	white; 5,0 kg	white; 8,5 kg	white; 15,5 kg

## Model designation

- Outdoor-Speaker, 50 W** ..... **ODS-050**  
 white, with mounting bracket
- Outdoor-Speaker, 100 W** ..... **ODS-100**  
 white, with mounting bracket
- Outdoor-Speaker, 200 W** ..... **ODS-200**  
 white, with mounting bracket

100V

**20 W** Impedance selector  
20 – 10 / 5 / 2,5 W – 8 ohms



PB-720 W

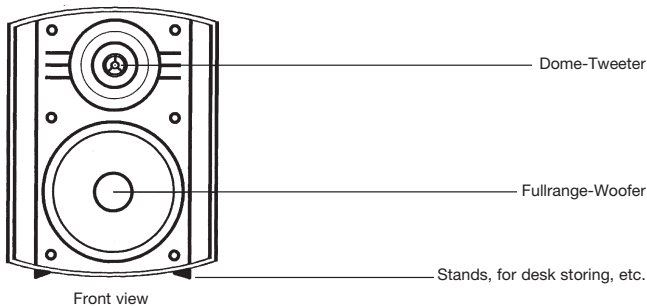
PB-720 S

### Description

These professional cabinet speakers, series PB-720 and PB-730 are perfect for sophisticated PA systems. Excellent speech and music reproduction are achieved. These speakers have a 2-way-system, a full range woofer and a dome tweeter which are fitted into a professionally created case ensuring perfect acoustics.

- The trapeze form allows mounting in various angles and corners. Little feet on the case bottom make it possible to place the speaker on a table, etc.

Figure shows PB-720 and PB-730



Technical data	PB-720 S / PB-720 W
Load rating (Music power)	20 W (50 W)
Transformer tapplings at 100V	20 – 10 / 5 / 2,5 W
Frequency range	170 – 20.000 Hz
Sound pressure at 1W/1m	90 dB
Sound pressure SPL Pmax/1m	103 dB @8kHz
Angle of refl. beam (-6dB) 1/4/8 kHz	150°/ 105°/ 100°
Speaker ø (mm) and impedance (ohms)	100 mm, Tweeter-Ø 52 mm/ 8 ohms
Dimensions HxWxD (mm)	195 x 130 x 105 mm (without bracket)
Weight (kg) colour	approx. 1,5 kg, S – black, W – white

**Pro-Sound Speaker, 20 W** black ..... **PB-720 S**  
with 100V matching transformer (20–10–5–2,5 W) and 8 ohms

**Pro-Sound Speaker, 20 W** white ..... **PB-720 W**  
with 100V matching transformer (20–10–5–2,5 W) and 8 ohms



**30 W** Impedance selector  
30 – 15 – 10 – 5 W – 8 ohms

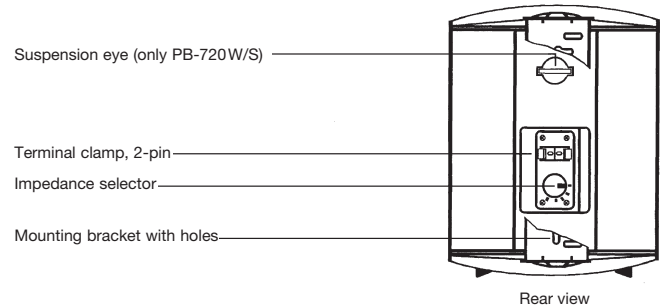


PB-730 W

PB-730 S

- The model PB-720 S/W has an additional swivel bracket and a pull out eyebolt.
- There is a hidden impedance selector on the back panel with 4 x 100V and an 1 x 8 ohms position. A built-in high quality 100V matching transformer, ensures full quality of sound pressure and playback.
- The speakers can be mounted horizontally or vertically. The grille can be taken off.

Figure shows PB-720 and PB-730



Technical data	PB-730 S / PB-730 W
Load rating (Music power)	30 W (80 W)
Transformer tapplings at 100V	30 – 15 – 10 – 5 W
Frequency range	120 – 20.000 Hz
Sound pressure at 1W/1m	90 dB
Sound pressure SPL Pmax/1m	105 dB @4,5kHz
Angle of refl. beam (-6dB) 1/4/8 kHz	130°/ 70°/ 100°
Speaker ø (mm) / impedance (ohms)	130 mm, Tweeter-Ø 52 mm/ 8 ohms
Dimensions HxWxD (mm)	240 x 181 x 140 mm (without bracket)
Weight (kg) colour	approx. 2,5 kg, S – black, W – white

**Pro-Sound Speaker, 30 W** black ..... **PB-730 S**  
with 100V matching transformer (30 – 15 – 10 – 5 W) and 8 ohms

**Pro-Sound Speaker, 30 W** white ..... **PB-730 W**  
with 100V matching transformer (30 – 15 – 10 – 5 W) and 8 ohms

# 100 V PRO-SOUND SPEAKER

# RCS



PB-760 W

PB-760 S

**60 W** Impedance selector  
60 – 30 – 15 – 10 W – 8 ohms



100 V

PASSIVE

ACTIVE



PB-760 S without grille

## Description

These professional and high volume PB-series cabinet speakers are ideal for PA systems. They offer an attractive design, best speech reproduction and perfect music performance.

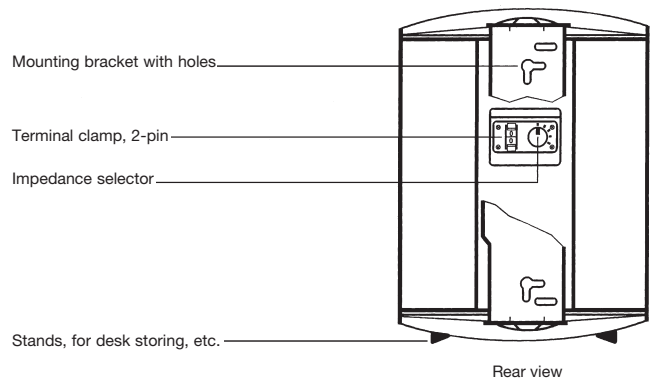
The speakers have a 8" full range woofer, a 25 mm Dome Tweeter, and a bass pipe, which is integrated into a professionally fitted cabinet.

The speakers can be used in- and outdoors as they have a "Butyl Rubber Suspension." They are an excellent component for sound systems in assembly halls, congress and dance halls, gymnasiums, events, etc.

Please consider the following features:

- The trapeze shape allows mounting in corners and at various angles. Small feet on the case bottom make it possible to stand this speaker on a table etc.
- The speaker-leads connection is very easy with 2 clamp clips.
- The speakers can be mounted in- and outdoors.
- There is a hidden impedance selector on the back panel with 4 x 100V and a 1 x 8 ohms position. As there is a fitted high quality 100V matching-transformer, there is no reduction of the sound pressure or playback quality.

- The speaker can be mounted vertically as well as horizontally. The grille can be removed if required by the customer for optical reasons.
- The speaker's shape and construction are excellent for the use in sound hanging lamps.



Accessories:



The wall bracket MB-700W made of metal is especially developed for the PB-series. It is free to pivot by locking screw. The inclination of the holder is fixable and adjustable by locking screw and latching joint.

**Wall Bracket, white** ..... **MB-700 W**  
for PB-730W/S and PB-760W/S

Technical data	PB-760 S/PB-760 W
Load rating (Music power)	60 W (150 W)
Transformer tappings at 100 V (in W)	60 – 30 – 15 – 10 W
Frequency range	88 – 18.000 Hz
Sound pressure at 1W/1m	92 dB
Sound pressure SPL Pmax/1m	110 dB @1kHz
Angle of refl. beam (-6dB) 1/4/8 kHz	120°/ 145°/ 115°
Speaker Ø (mm) and Impedance	165 mm, Tweeter-Ø 65 mm, 8 ohms
Dimensions HxWxD (mm)	365 x 272 x 210 (without bracket)
Weight (kg), Colour	approx. 6,0 kg, S – black, W – white

**Pro-Sound Speaker, 60 W** black ..... **PB-760 S**  
with 100V matching transformer (60 – 30 – 15 – 10 W) and 8 ohms

**Pro-Sound Speaker, 60 W** white ..... **PB-760 W**  
with 100V matching transformer (60 – 30 – 15 – 10 W) and 8 ohms

100V

PASSIVE

ACTIVE

The Pro-Sound Speaker series PRO with high speaking and syllable understanding is also in the best way suitable for Hi-Fi music performance.

These speakers are universally applicable, as they are made of high-quality components, are of small weight and compact dimensions.

### Description

These 100V speakers have a high-quality scratch resistant and shockproof plastic housing. For mounting, three threaded inserts are used.

The Pro-Sound speakers of the series PRO are in the best way suitable in the stationary as well as in the mobile acoustic irradiation sector, because of their small weight and the compact dimensions.

Please consider the following features:

- The high-quality 100V matching transformer avoids almost any loss of sound pressure and playback quality.
- A stable unscrewable metal grille completes the robust structure.
- A laterally integrated hand grip with PRO-1210/1220 increases the transport comfort and the convenience of use.
- The speaker contains a 8" or 12" bass woofer of high quality and a 25 mm or 34 mm tweeter of the same standard.
- The outstanding sound is influenced also by the acoustically professionally designed housing. Adapted frequency switches provide for a high efficiency and an accurate sound characteristic in the various speaker.

### Accessories PB-1210/20 PRO-1200



Wall Mounting Bracket PWB-100



Wall Bracket QWH-035



Floor Stand QST-185

- As input terminal of the speaker boxes serve high-quality speaker sockets. For slaving the signal through the boxes a second parallel switched speaker socket is available.

### Accessories PB-806/810

- For the attachment of the speaker box PB-806/810, a mounting bracket is in the scope of supply. The active speaker can be swivelled around 180° inside of the mounting bracket. By using this bracket, the box can be attached in a vertical or horizontal position to the wall or ceiling.
- The speaker can be mounted onto the speaker stand PST-100, using an adapter flange (scope of supply PST-100).

### Accessories PB-1210/1220

- The speaker stand QST-185 is suitable for the speaker box PB-1210/1220. The extremely stable floor stand is variable in height (109 - 185 mm) and easy to set up or fold up.
- The special optionally available wall bracket QWH-035 is suitable for our PB-1210/1220 as well as for all boxes with a 36 mm stand flange. The bracket is 15° swivell- and tiltable and provides a relocatable and removable retaining carriage. .

Technical data	PB-806	PB-810	PB-1210S/W	PB-1220S/W	PRO-800	PRO-1200S/W
Type of speaker	100V	100V	100V	100V	PASSIVE	PASSIVE
Load rating (Music power)	100/60 W (sine)	130/100 W (sine)	200/100 W (sine)	300/200 W (sine)	100 W (RMS), 150 W (MAX)	200 W (RMS), 300 W (MAX)
Bass-Speaker / Tweeter	1 x 8" / 25 mm	1 x 8" / 25 mm	1 x 12" / 34 mm	1 x 12" / 34 mm	1 x 8" / 25 mm	1 x 12" / 34 mm
Frequency range (±10dB)	60 – 20.000 Hz	60 – 20.000 Hz	55 – 20.000 Hz	55 – 20.000 Hz	60 – 20.000 Hz	45 – 20.000 Hz
SPL 1 W/1 m	93 dB	93 dB	96 dB	96 dB	93 dB	97 dB
SPL Pmax/1m	110 dB	113 dB	116 dB	119 dB	112 dB	120 dB
Speakers Ø (mm)	203, Tweeter 25	203, Tweeter 25	305, Tweeter 34	305, Tweeter 34	203, Tweeter 25	305, Tweeter 34
Transformer tapings at 100V	60 W	100 W	100 W	200 W	8 ohms	8 ohms
Socket adapters	2 x Speaker	2 x Speaker	2 x Speaker	2 x Speaker	2 x Speaker	2 x Speaker
Dimensions H x W x D (mm)	410 x 285 x 250 mm	410 x 285 x 250 mm	650 x 420 x 330 mm	650 x 420 x 330 mm	410 x 285 x 250 mm	650 x 420 x 330 mm
Colour	black;	black;	black or white;	black or white;	black;;	black or white;
Weight	7,2 kg	8,6 kg	20,4 kg	20,7 kg	6,6 kg	18,4 kg

# 100 V PRO-SOUND SPEAKER

# RCS



PB-1210/20  
PRO-1200

BALL THROWING-  
PROOF CERTIFIED

DIN 18032-3



100 V

PASSIVE

ACTIVE

also available  
in white

PB-1210/20 S  
PRO-1200 S

PB-1210/20 W  
PRO-1200 W

QST -185  
(Flor stand PB-1210/1220  
or PRO-1200)

PST -100  
(Flor stand PB-806/810  
or PRO-800)

PB-806/810  
PRO-800

## Model designations

**100 V Pro-Sound Speaker**, (60 W) ..... **PB-806**  
**100 V Pro-Sound Speaker**, (100 W) ..... **PB-810**  
**Passive Pro-Sound Speaker**, (100 W) ..... **PRO-800**

Accessories:

**Floor Stand**, black, ..... **PST-100**  
for PB-806/810

## Model designations

**100 V Pro-Sound Speaker**, (100 W) ..... **PB-1210 S/W**  
**100 V Pro-Sound Speaker**, (200 W) ..... **PB-1220 S/W**  
**Passive Pro-Sound Speaker**, (200 W) ..... **PRO-1200 S/W**

Ordercode for colors: **PRO-1200S** = black **PRO-1200W** = white

Accessories:

**Floor Stand**, black, for PB-1210/20 or PRO-1200 ..... **QST-185**  
**Wall Bracket**, black, for PB-1210/20 or PRO-1200 ..... **QWH-035**  
**Wall Mounting Bracket**, black or white, ..... **PWB-100 S/W**  
for PB-1210/20 or PRO-1200

100V

PASSIVE

ACTIVE

## ● GENERAL

Pro-Sound speaker of the QRF-series are perfectly suitable for voice and music transmission. They can be used for medium-sized up to large events. They were constructed in a very stable way. The high-quality, sophisticated sound

predestines this PA-loudspeaker for an application in an area of very professional PA and DJ. This loudspeaker is perfectly suitable for fixed installations (e.g. school gyms and event locations, etc.).

## ● MOUNTING

All speaker boxes of the QRF-series (excluding monitor QRF-212 M and subwoofer QRF-115 S) can also be hung-up. This means they are equipped with five recessed eyebolts on each (one flying ear-rail on the back side and two on each side).



The eyebolts QRK-005 are optional available as Set of 5 pieces.

Ball throwing-proof certified (DIN 18032-3) in combination with the wall-bracket QWH-050, are the following speakers: **QRF-210, QRF-212, QRF-215, QRF-115S**

## ● ASSEMBLY

The housing of these loudspeakers consists of grey varnished (3 layers polyurethane) 18 mm MDF. They also have incorporated carrying handles. A massive metal grille completes the robust structure. Rubber feet help to avoid a damage of the housing.

## ● EQUIPMENT

The speaker boxes are equipped with 12" and respectively 15"-bass woofers. These are very high quality products with excellent tweeter-horns ("double-radial"). All the boxes of this series do have frequency gates, which are adjusted to the individual assembly.

## ● CONNECTORS

As input connectors the speaker boxes are provided with high-quality speaker sockets. In order to connect the signal through, all boxes are equipped with a speaker socket switched in a parallel way.

## ● STAND

We recommend the speaker stand QST-185 (109 – 185 mm) for the speaker boxes QRF-210 / 212 and QRF-212 M, the speaker stand QST-200 (115 – 200 mm) for the QRF-2212, QRF-215 and QRF-315.

The stands are very stable and are made of anodized aluminium circular tubes (ø 36 mm). They are adjustable for height stepwise and are very easy to build and fold up.

The QDB-120 serves as a connector between a QRF-115 S and a different box from the ORF-series. Wall bracket QWH-035 is 15° sloping and 160° pivoting and is suited for the types QRF-210 / 212 and QRF-212 M.

Technical data	QRF-212 M	QRF-210	QRF-212	QRF-2212	QRF-215	QRF-315	QRF-115 S
Type of speaker	2-way-multi-functional, fullrange	2-way fullrange	2-way fullrange	2-way horizontal line-array	2-way fullrange	3-way fullrange	sub-woofer
Nominal capacity/performance	250 W (RMS), 400 W (MAX)	220 W (RMS), 350 W (MAX)	250 W (RMS), 400 W (MAX)	250 W (RMS), 400 W (MAX)	300 W (RMS), 500 W (MAX)	300 W (RMS), 500 W (MAX)	600 W (RMS), 900 W (MAX)
Bass-Speaker	1x 12"	1x 10"	1x 12"	2x 12"	1x 15"	1x 8", 1x 15"	1x 15" Woofer
Horn-Speaker	1x 1,3"	1x 1,3"	1x 1,3"	1x 1,3"	1x 1,3"	1x 1,3"	–
Stand hole	yes	yes	yes	yes	yes	yes	yes (on the top)
Sound pressure 1W/1m	95 dB SPL	96 dB SPL	96 dB SPL	99 dB SPL	97 dB SPL	97 dB SPL	98 dB SPL
Sound pressure SPL MAX	119 dB SPL	122 dB SPL	123 dB SPL	129 dB SPL	124 dB SPL	124 dB SPL	130 dB SPL
Frequency (±3 dB)	55 ~ 20.000 Hz	53 ~ 20.000 Hz	50 ~ 20.000 Hz	40 ~ 20.000 Hz	40 ~ 20.000 Hz	50 ~ 20.000 Hz	40 ~ 115 Hz
Impedance (nominal)	8 ohms	8 ohms	8 ohms	8 ohms	8 ohms	8 ohms	4 ohms
LS-Connectors	2 x Speaker	2 x Speaker	2 x Speaker	2 x Speaker	2 x Speaker	2 x Speaker	2 x Speaker
Corresponding radiation	90° x 40°	120° x 60°	120° x 60°	120° x 60°	120° x 60°	120° x 60°	–
Dimensions (H x W x D)	350 x 590 x 390 mm	574 x 390 x 375 mm	614 x 418 x 375 mm	975 x 440 x 427 mm	758 x 504 x 483 mm	960 x 470 x 420 mm	594 x 504 x 602 mm
Weight, Colour	20 kg, grey	22 kg, grey	25 kg, grey	42 kg, grey	35,5 kg, grey	42 kg, grey	40 kg, grey

# QRF-SERIE SPEAKER-SYSTEMS

PROFESSIONAL SPEAKER-SYSTEMS

# RCS



**BALL THROWING-  
PROOF CERTIFIED**  
DIN 18 032-3

100 V  
**PASSIVE**  
ACTIVE



## Model designations

**Pro-Sound Multifunct. Speaker, 250 W**..... **QRF-212 M**

2-way-system with 12" bass woofer and 1,3" horn

**Pro-Sound Speaker, 220 W**..... **QRF-210**

2-way-system with 10" bass woofer and 1,3" horn

**Pro-Sound Speaker, 250 W**..... **QRF-212**

2-way-system with 12" bass woofer and 1,3" Horn

**Pro-Sound Speaker, 250 W**..... **QRF-2212**

2-way Horizontal-Line-Array system with 2x 12" bass woofer and 1,3" horn

Accessories:

**Wall Bracket**, only for QRF-210, QRF-212 and QRF-212 M ..... **QWH-050**

**Eyebolts-Set**, consists of 5 pieces eyebolts ..... **QRK-005**

**Pro-Sound Speaker, 300 W**..... **QRF-215**

2-way-system with 15" bass woofer and 1,3" horn

**Pro-Sound Speaker, 300 W**..... **QRF-315**

3-way system with 8" and 15" bass woofer and 1,3" horn

**Pro-Sound Speaker, 600 W**..... **QRF-115 S**

Sub woofer with 15" bass woofer      Zubehör:

Accessories:

**Speaker-Stand, up to 1,85 m high**..... **QST-185**

**Speaker-Stand, up to 2,00 m high**..... **QST-200**

100V

PASSIVE

ACTIVE

## ● GENERAL

Pro-Sound Speakers of the „QRI“ series are ideal for the transmission of speech and music. They are e.g. Ideal for medium to large events. In particular, this speaker Series is also suitable for the fixed instal-

lation area (for example, in sports and multi-purpose halls, theme restaurants, smaller stadiums and theatres, etc.)

## ● Description

The QRI series consists of passive 2-way loudspeakers in symmetrical cluster design for permanent installation. The speakers are equally suitable for voice and music playback as top-part or full-range speakers.

This loudspeaker series is available as a low-impedance passive system as well as a 100 V system for integration in electroacoustic systems (ELA) and electro-acoustic emergency warning systems (ENS).

The Passive 8" Bass Reflex Subwoofer QRI-108S/ST makes the ideal low-frequency extension for compact systems. Its wedge design makes it ultra-compact and ideal for wall, ceiling and corner mounting.

Please consider the following features:

- Please consider the following features:
- Silky smooth and even reproduction of the high frequencies.
- The loudspeakers are characterized by low-feedback behaviour.
- Lifelike and transparent sound.
- Designed for both horizontal and vertical mounting positions.

## System details



Multi-Mounting Bracket



Wall Bracket (clustervariant)



Corner mounting of QRI-108S/ST

- Integrated hardware for extensive install and cluster variants (horizontal and vertical) for independent installation.
- Designed for high-level sound applications, e.g. in sports and multi-purpose halls, event gastronomy, smaller stadiums and theatres.
- Of course all special paint finishes of the loudspeaker boxes in all RAL colours are possible on request.

## ● Wall bracket

- The optionally available wall brackets are swivel and tilt brackets. They are each available for horizontal or vertical wall mounting.
- If required, an array system can be set up or detached by cluster (optional).

★

Technical data	QRI-108S	QRI-108ST	QRI-210	QRI-210T	QRI-212	QRI-212T	QRI-215	QRI-215T
Type of speaker	PASSIVE passive Subwoofer	100V passive Subwoofer	PASSIVE 2-way Fullrange	100V 2-way Fullrange	PASSIVE 2-way Fullrange	100V 2-way Fullrange	PASSIVE 2-way Fullrange	100V 2-way Fullrange
Nom. capacity/performance	400/200 W	400/100 W	700/350 W	700/100 W	700/350 W	700/200 W	1000/500 W	1000/200 W
Bass-Speaker	1x 8" Neodymiumium		1x 10"		1x 12"		1x 15"	
Horn-Speaker	-		1x 1" (1,4" Voice coil)		1x 1" (1,4" Voice coil)		1x 1" (1,4" Voice coil)	
Stand hole	-		-		-		-	
Sound pressure 1W/1m	95 dB SPL		93 dB		97 dB		98 dB	
Sound pressure SPL MAX	121 dB SPL		118 dB		122 dB		125 dB	
Frequency range (±3 dB)	48 - 20.000 Hz		70 - 20.000 Hz		60 - 20.000 Hz		55 - 20.000 Hz	
Impedance (nominal)	8 ohms	100 ohms @100V	8 ohms	100 ohms @100V	8 ohms	50 ohms @100V	8 ohms	50 ohms @100V
LS-Inputs	2x Speakon, 2x Phoenix (In/Out)		2x Speakon, 2x Phoenix (In/Out)		2x Speakon, 2x Phoenix (In/Out)		2x Speakon, 2x Phoenix (In/Out)	
Beam angle (HxV)	omnidirectional		85° x 55° (rotatable elliptical horn)		85° x 55° (rotatable elliptical horn)		85° x 55° (elliptical horn)	
Dimensions (WxHxD)	340 x 400 x 340 mm		580 x 335 x 355 mm		610 x 385 x 415 mm		700 x 450 x 420 mm	
Insulation class	IP 44		IP 44		IP 44		IP 44	
Weight / colour	8 kg; black	8,7 kg; black	18 kg; black	19,2 kg; black	20 kg; black	22,1 kg; black	24 kg; black	28,1 kg; black

# QRI-SERIE 200 SPEAKER-SYSTEMS

PROFESSIONAL FIX INSTALL SPEAKER-SYSTEMS

# RCS



QWH-210H

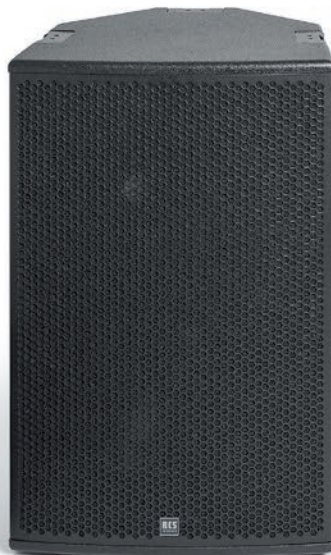


QWH-210V

**BALL THROWING-  
PROOF CERTIFIED**  
DIN 18 032-3

**100 V**  
**PASSIVE**  
ACTIVE

15"



QRI-215/T

12"



QRI-212/T

10"



QRI-210/T



QRI-108S/ST, Subwoofer

## Model designations

- Pro-Sound-Speaker, 350 W, passive** ..... **QRI-210**  
2-way-system with 10" Bass-Woofer and 1" Horn
- Pro-Sound-Speaker, 350 W, passive** ..... **QRI-212**  
2-way-system with 12" Bass-Woofer and 1" Horn
- Pro-Sound-Speaker, 500 W, passive** ..... **QRI-215**  
2-way-system with 15" Bass-Woofer and 1" Horn

- Pro-Sound-Speaker, 200 W, passive** ..... **QRI-108S**  
Subwoofer (passiv) with 8" Bass-Woofer

Accessories:

- Multimount-Holder, for QRI-210/T, vertical** ..... **QWH-210V**
- Multimount-Holder, for QRI-212/T, vertical** ..... **QWH-212V**
- Multimount-Holder, for QRI-215/T, vertical** ..... **QWH-215V**

- Pro-Sound-Speaker, 100 W, with 100V-transformer** ... **QRI-210T**  
2-way-system with 10" Bass-Woofer and 1" Horn
- Pro-Sound-Speaker, 200 W, with 100V-transformer** ... **QRI-212T**  
2-way-system with 12" Bass-Woofer and 1" Horn
- Pro-Sound-Speaker, 200 W, with 100V-transformer** ... **QRI-215T**  
2-way-system with 15" Bass-Woofer and 1" Horn

- Pro-Sound-Speaker, 100 W, with 100V-transformer** . **QRI-108ST**  
Subwoofer (passiv) with 8" Bass-Woofer

Accessories:

- Multimount-Holder, for QRI-210/T, horizontal** ..... **QWH-210H**
- Multimount-Holder, for QRI-212/T, horizontal** ..... **QWH-212H**
- Multimount-Holder, for QRI-215/T, horizontal** ..... **QWH-215H**

100V

PASSIVE

ACTIVE

## ● GENERAL

Pro-Sound Speakers of the „QRI“ series are ideal for the transmission of speech and music. They are e.g. ideal for small events. In particular, this speaker series is also suitable for the fixed installation

area (for example, in catering, conference and training rooms, churches, museums, and smaller theatre halls, etc.).

## ● Description

The QRI Series 400 consists of PA speakers, which are equally suitable for voice and music playback in conjunction with the QRI-108S subwoofer.

This loudspeaker series is available in both a low-impedance, passive system and as a 100 V system for integration in electroacoustic systems (ELA) and electro-acoustic emergency warning systems (ENS).

The QRI-402 / T is a passive 2-way speaker in d'Appolito arrangement in subtle mini format, which is well suited for speech or the music reproduction of moderate signal levels with its linear Frequency range.

The QRI-404 / T is a 2.5-way speaker in subtle column design, which is equally suitable for both voice and music playback in conjunction with the QRI-108S subwoofer..

Please consider the following features:

- Silky smooth and even reproduction of the high frequencies.
- The loudspeakers are characterized by low-feedback behaviour.
- Lifelike and transparent sound.

## Zubehör



Wall bracket QWH-404 (U-Bracket)



Wall bracket of QRI-401 (L-Bracket)



Subwoofer QRI-108S/ST optional available

- Designed for both horizontal and vertical mounting positions.
- Integrated hardware for extensive install and cluster variants (horizontal and vertical) for independent installation.
- Developed for requirements such as background music in catering, conference and training rooms. Also suitable for churches, museums, multimedia, smaller theatre, or similar.
- Of course all special finishes of the loudspeaker boxes in all RAL colors are possible on request. WALL BRACKET
- The optionally available wall brackets are swivelling U-bolts. They are each available for horizontal or vertical wall mounting.
- If required, cluster (optional) can be used to set up or remove a line array system.

## ● Wall bracket

- The optionally available wall brackets are swivel and tilt brackets. They are each available for horizontal or vertical wall mounting.
- If required, an array system can be set up or detached by cluster (optional).

★

Technical data	QRI-401	QRI-401 T	QRI-402	QRI-402 T	QRI-404	QRI-404 T	QRI-108 S	QRI-108 ST
Type of speaker	PASSIVE Fullrange	100V Fullrange	PASSIVE 2-way Fullrange	100V 2-way Fullrange	PASSIVE 2,5-way Fullrange	100V 2,5-way Fullrange	PASSIVE passive Subwoofer	100V passive Subwoofer
Nom. capacity/performance	100/50 W	100/30 W	250/125 W	250/60 W	400/200 W	400/60 W	400/200 W	400/100 W
Bass-Speaker	1x 4" Broadband		2x 4" Broadband		4x 4" Broadband		1x 8" Neodymium	
Horn-Speaker	-		1x 1" Dome		1x 1" Dome		-	
Stand hole	-		-		-		-	
Sound pressure 1W/1m	87 dB		88 dB		90 dB		95 dB SPL	
Sound pressure SPL MAX	106 dB		112 dB		113 dB		121 dB SPL	
Frequency range (±3 dB)	150 - 20.000 Hz		120 - 20.000 Hz		100 - 20.000 Hz		48 - 20.000 Hz	
Impedance (nominal)	16 ohms	333 ohms @100V	16 ohms	166 ohms @100V	16 ohms	166 ohms @100V	8 ohms	100 ohms @100V
LS-Inputs	2x Speakon, 2x Phoenix (In/Out)		2x Speakon, 2x Phoenix (In/Out)		2x Speakon, 2x Phoenix (In/Out)		2x Speakon, 2x Phoenix (In/Out)	
Beam angle (HxV)	80° radial		80° x 40°		80° x 40°		omnidirectional	
Dimensions (WxHxD)	125 x 125 x 145 mm		290 x 135 x 166 mm		500 x 135 x 166 mm		340 x 400 x 340 mm	
Insulation class	IP 44		IP 44		IP 44		IP 44	
Weight / colour	1,5 kg; white	1,8 kg; white	3,5 kg; white	3,9 kg; white	6,0 kg; white	6,4 kg; white	8 kg; black	8,7 kg; black

# QRI SERIES 400 SPEAKER

PROFESSIONAL FIX INSTALL SPEAKER-SYSTEMS

# RCS



100 V

PASSIVE

ACTIVE



## Model designations

- Pro-Sound-Speaker, 50 W, passive** ..... **QRI-401**  
with 4" Broadband chassis, incl. L-bracket wall mount
- Pro-Sound-Speaker, 125 W, passive** ..... **QRI-402**  
2-way-system with 2x 4" Broadband-Speaker and 1" Dome
- Pro-Sound-Speaker, 200 W, passive** ..... **QRI-404**  
2,5-way System with 4x 4" Broadband-Speaker and 1" Dome

Accessories:

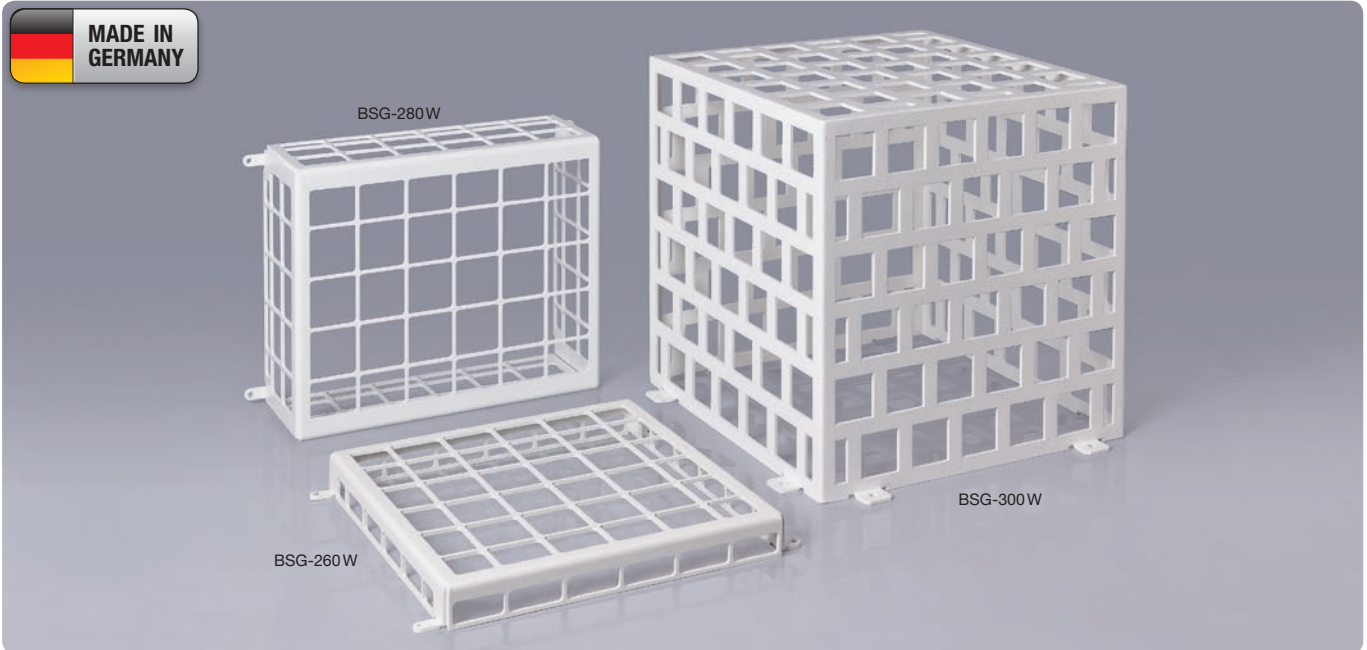
- Pro-Sound-Speaker, 200 W, passive** ..... **QRI-108S**  
Subwoofer (passive) with 8" Bass-Woofer
- Wall Mounting Bracket, (U-bracket) for QRI-402/T** ..... **QWH-402**

## Model designations

- Pro-Sound-Speaker, 30 W, with 100V-transformer** ..... **QRI-401 T**  
with 4" Broadband chassis, incl. L-bracket wall mount
- Pro-Sound-Speaker, 60 W, with 100V-transformer** ..... **QRI-402 T**  
2-way-system with 2x 4" Broadband-Speaker and 1" Dome
- Pro-Sound-Speaker, 60 W, with 100V-transformer** ..... **QRI-404 T**  
2,5-way System with 4x 4" Broadband-Speaker and 1" Dome

Accessories:

- Pro-Sound-Speaker, 100 W, with 100V-transformer** . **QRI-108ST**  
Subwoofer (passive) with 8" Bass-Woofer
- Wall Mounting Bracket, (U-bracket) for QRI-404/T** ..... **QWH-404**



### Description

Our ball protection grid series protects not ball-resistant speakers from vandalism and damage. The grids were developed specifically for use in sports and multipurpose halls in which an increased protection of the speaker installation on ball hits is necessary.

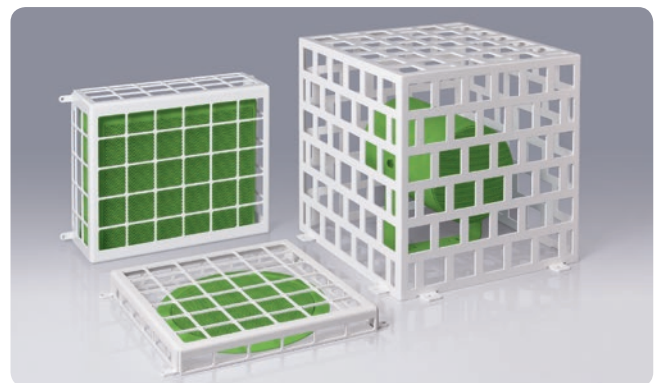
The ball protection grilles are designed to minimize the loss of sound transmission. In addition, the series has a very neutral and stylish design that fits well into architecture and interior design.

Please consider the following features:

- Suitable for ceiling or wall mounting.
- Robust and stable design in white sheet steel.
- For mounting, the grid is just simply screwed on by 4 screws or 8 screws (only for BSG-300) directly to the ceiling or wall, over the speaker you want to protect.
- Protection for speakers without impact resistance.

- Special coatings in all RAL colors are available on request.

★



Technical data	BSG-260W	BSG-280W	BSG-300W
Dimensions (WxHxD)	263 x 263 x 27 mm	295 x 230 x 100 mm	300 x 300 x 300 mm
weight	0,9 kg	1,3 kg	5,5 kg
Colour / Material	white; metal		
Suitable speakers	all RCS-Ceiling- and Ceiling Speakers	BC-/BCH-Series	CSP-115/220D, DH-110S/115S/130S, DH-130A, BC-215C/230C, PHS-81T30BS, SPJ-52WHBS, SPJ-53WHBS

### Model designations

- Ball protection grid**, for Ceiling- and Ceiling Speaker, 263 x 263 x 27 mm (WxHxD), e.g. for RC-/SC-Series ..... **BSG-260W**
- Ball protection grid**, for Cabinet Speaker, 295 x 230 x 100 mm (WxHxD), e.g. for BC-Series ..... **BSG-280W**
- Ball protection grid**, for Horn- or Special Speaker, 300 x 300 x 300 mm (WxHxD), e.g. for DH-115S ..... **BSG-300W**



100 V

PASSIVE

ACTIVE



## Description

The ZS-3 impedance meter measures the actual impedance of speakers and 100V speaker systems.

The measurement is carried out by a 1 kHz test generator and is displayed on a 4-digit LCD display. For measurements there are three different measuring ranges available: 0-20 ohms, 200 ohms and 2000 ohms.

The LCD display has a data hold function and displays it when the battery voltage becomes low. The device comes in a handy protective bag. Also included are test leads, the required mignon batteries and a device supplement with conversion table for power values.

## Carrying and storage bag with accessories

High-quality processed vinyl fabric bag for storing the ZS-3. The measuring device is completely protected by the padding together with the supplied accessories in the bag.

There are 3 compartments in the carrying and storage bag, which provide enough space for the accommodation of measuring cables, measuring clamps, carrying strap and spare batteries.

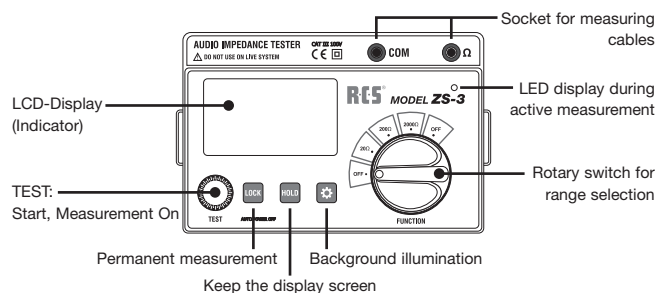


Included with the ZS-3:

- Storage bag
- Digital impedance Tester with cover
- Two measuring cables with removable measuring terminals
- A shoulder strap
- 6 pieces of AA batteries

Please consider the following features:

- Digital display of the impedance
- For low-impedance speakers as well as for 100 V speakers
- Measuring ranges: 0-20 ohms, 200 ohms, 2000 ohms
- High measurement accuracy ( $\pm 2\%$ ) through calibration
- Battery monitoring by display
- Protection and storage bag



Technical data	ZS-3
Inputs	Banana plug
Measurement ranges	0-20 ohms, 0-200 ohms, 0-2000 ohms
Measurement accuracy	$\pm 2\%$
Test frequency	1 kHz
Power supply	6 x 1,5V AA battery
Dimensions and Weight	168x110x62 mm; 584g (incl. battery)

## Model designation

Digital Impedance Tester, with accessories ..... **ZS-3**

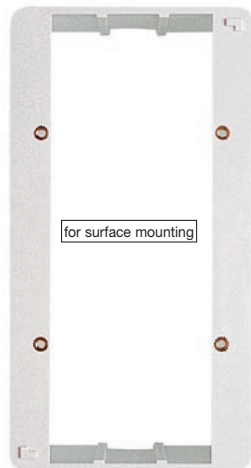
100V

PASSIVE

ACTIVE



Control-program combination



Surface mount socket EG-200

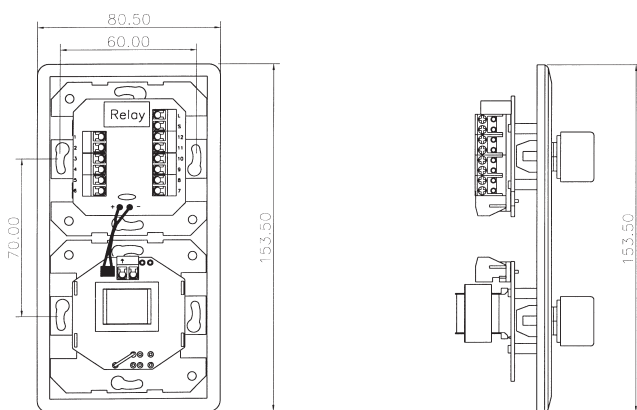
### Description

This new LPW presents the combination of a volume control and a program selector switch. It's possible to choose 5 channels and to individually adjust the volume. For technical facts of the program selector switches and volume controls please look on the left side.

The LPW-combinations are basically constructed with a 24V emergency call relay which enables an emergency call even when all controls or program selector switches are in 0-position. The LPW-combination is suitable to 2 x 55 mm mount sockets.

★

Rear and Front view of the Control-program combination

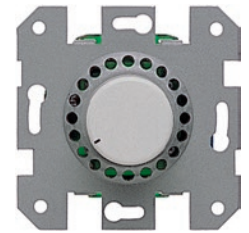


**Control-Program-Combination**, up to 12 W . . . . . **LPW-112R**  
alpine white with relay

**Control-Program-Combination**, up to 50 W . . . . . **LPW-150R**  
alpine white with relay

The surface mount socket **EG-200** (plastic) is made for surface installation of the control-program combination.

**Surface Mount Socket** (surface mounting, plastic) . . . . . **EG-200**



### Description

These program selector switches are for the installation in 55mm flush mount sockets. In the case of surface installation, please use the installation housing EG-100. You can order the device also without coverage.

The program selector switch is made for the reception of up to 5 different channels with one additional 0-position. It is also equipped with an emergency call relay.

★

**Program Selector Switch** alpine white with relay . . . . . **PW-106R**

**Program Selector Switch** without coverage, with relay . . . **PW-006R**

### Mounting Case



### Description

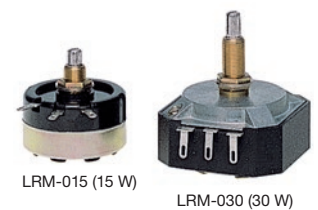
White, high-quality, impact and scratch resistant plastic for the installation of the volume controls or program selector switches.

Can be used as a surface housing as well as a protective case for flush-mounting.

Height: 81 mm  
Width: 80 mm  
Depth: 51 mm

**Mounting Case** . **EG-101**

### L-Control (mono)



### Description

These mono-L-controls are for setting the speaker volume levels on low impedance use. They are especially suitable for the mounting in cabinet speakers etc.

**LRM-015**: 15 W, imp. 4 – 8 ohms (± 25 %) Control range 0 – 40 dB, axis Ø 6 mm, cabinet Ø 41 x (H) 24 mm

**LRM-030**: 30 W, imp. 4 – 8 ohms (± 25 %) Control range 0 – 40 dB, axis Ø 6 mm, cabinet Ø 50x50x28 mm.

**L-Control**, 15 W . **LRM-015**

**L-Control**, 30 W . **LRM-030**



with relay

## Description

The automatic volume control is done by a matching transformer of 100V and a switch with 11 steps (10 control steps, each 3 decibel + 1 zero position). The switches are overwindable in order to avoid wilful demolition.

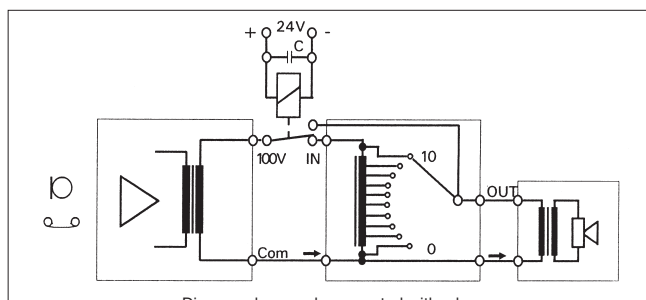
The volume controls come with **emergency call relay**. They are suitable for every standard 55mm mount socket. Cover plates and frames are in a modern, discreet design.

If a building project is planned to be equipped with the same surface, use of volume controls without cover plate and frame is possible, as shown on the right. If necessary, the attached control knob can also be changed.

Please consider the following features:

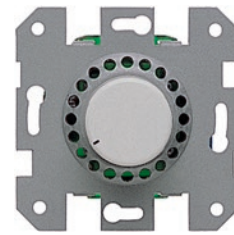
- Attenuation in 10 steps.
- Switch can be turned through.
- Audio transformer for 100V transmission technology.
- Flush mounting, surface mounting with suitable, optionally available mounting case EG-101.

★



## Model designations

- Volume Control** up to 12 W, alpine white with relay . . . . . **LR-112 R**
- Volume Control** up to 50 W, alpine white with relay . . . . . **LR-150 R**
- Volume Control** up to 100 W, alpine white with relay . . . . . **LR-1100 R**



with relay

## Description

The automatic volume control is done by a matching transformer of 100V and a switch with 11 steps (10 control steps, each 3 decibel + 1 zero position). The switches are overwindable in order to avoid wilful demolition.

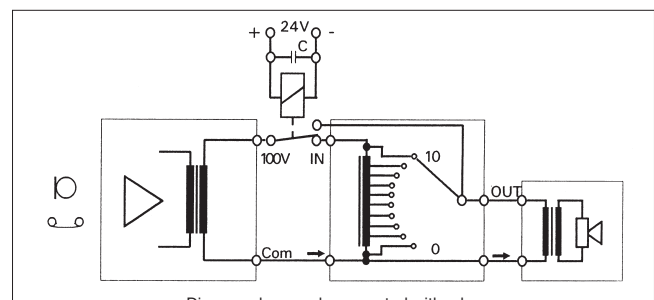
The volume controls come with **emergency call relay**. They are suitable for every standard 55mm mount socket.

If a building project is planned to be equipped with the same surface, use of volume controls without cover plate and frame is possible, as shown on the right. If necessary, the attached control knob can also be changed.

Please consider the following features:

- For installation in existing or desired surface programs.
- Attenuation in 10 steps.
- Switch can be turned through.
- Audio transformer for 100V transmission technology.

★



## Model designations

- Volume Control** up to 12 W, without coverage, with relay . . . . . **LR-012 R**
- Volume Control** up to 50 W, without coverage, with relay . . . . . **LR-050 R**
- Volume Control** up to 100 W, without coverage, with relay . . . . . **LR-0100 R**

100 V

PASSIVE

ACTIVE

- 100V
- PASSIVE
- ACTIVE

### Description

The presented speaker chassis are produced according to the newest international quality standard. Long lasting experience assures perfect manufacturing of both the mechanical and the physical properties.

The illustrated models are especially appropriate for playback with PA systems, but also best suited with professional facilities, due to their broadband. They satisfy with sound pressure, frequency range and playback quality.

### 10 W



Technical data	LC-310
Load rating (Music power)	10 (15) Watt
Nominal impedance	8 ohms
Frequency range	80 – 16.000 Hz
SPL at 1 W/1 m	90 dB
Total-(Magnet)-weight	275 g (80 g)
Basket outside Ø	92 mm
Magnet dimension (mm)	60 x 32 x 8
Height (installation depth)	38 mm

Speaker-Chassis ..... **LC-310**

### 10 W



Technical data	LC-510 T
Load rating (Music power)	10 (15) Watt
Nominal impedance	8 ohms
Frequency range	70 – 17.000 Hz
SPL at 1 W/1 m	92 dB
Total-(Magnet)-weight	392 g (155 g)
Basket outside Ø	119/129 mm
Magnet dimension (mm)	70 x 32 x 10
Height (installation depth)	45 mm

Speaker-Chassis ..... **LC-510 T**

### 10 W

also in 20 ohms  
**LC-610-20**



Technical data	LC-610
Load rating (Music power)	10 (15) Watt
Nominal impedance	8 ohms
Frequency range	80 – 18.000 Hz
SPL at 1 W/1 m	92 dB
Total-(Magnet)-weight	540 g (150 g)
Basket outside Ø	165 mm
Magnet dimension (mm)	70 x 32 x 10
Height (installation depth)	55 mm

Speaker-Chassis ..... **LC-610**

### 40 W

2-way chassis



Technical data	LC-640 CX
Load rating (Music power)	40 (60) Watt
Nominal impedance	8 ohms
Frequency range	50 – 20.000 Hz
SPL at 1 W/1 m	93 dB
Total-(Magnet)-weight	1050 g (660 g)
Basket outside Ø	165 mm
Magnet dimension (mm)	100 x 60 x 15
Height (installation depth)	68 mm

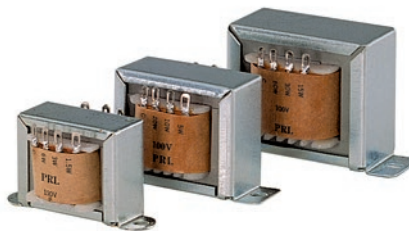
Speaker-Chassis (Coaxial) .. **LC-640 CX**

## 100 V-MATCHING-TRANSFORMER

Connecting cable approx. 20 mm



„L“ at the end of the model designation means:  
With connecting cables.



„S“ at the end of the model designation means:  
With solder lugs

### Model designations and Technical data:

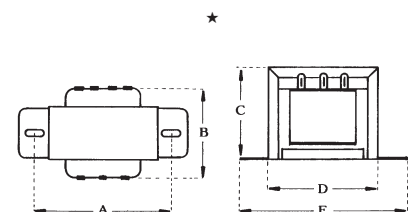
Modell	Load rating	Primary 100V	Secondary	Core	Weight	Dimensions mm (see sketch)				
						A	B	C	D	E
<b>MT-040 L</b>	<b>4W</b>	4 – 2 – 1W	8 ohms	41 x 14 mm	170 g	51	33	36	43	62
<b>MT-060 L</b>	<b>6W</b>	6 – 3 – 1,5W	8 ohms	41 x 14 mm	180 g	51	33	36	43	62
<b>MT-101 L</b>	<b>10W</b>	10 – 5 – 2,5W	8 ohms	41 x 14 mm	190 g	51	33	36	43	62
<b>MT-150 S</b>	<b>15W</b>	15 – 7,5 – 3,9 – 1,8W	4 - 8 ohms	48 x 20 mm	340 g	60	42	42	50	70
<b>MT-200 L</b>	<b>20W</b>	20 – 10 – 5W	8 ohms	48 x 20 mm	370 g	60	42	42	50	70
<b>MT-310 L</b>	<b>30W</b>	30 – 15 – 7,5W	4 – 8 – 16 ohms	48 x 25 mm	410 g	60	48	42	50	70
<b>MT-600 S</b>	<b>60W</b>	60 – 30 – 15W	4 – 8 ohms	57 x 25 mm	570 g	71	50	50	59	82

### Description

The presented 100 V-matching transformers are produced according to the newest international quality standards.

The use of best materials, including modern manufacturing methods, enables the very small dimensions of the matching transformer. The matching transformer features an excellent efficiency ratio.

The frequency ranges are between 50 Hz in the low and up to 18000 Hz in the high frequencies range.





## Description

These high-quality ring core audio transformers are ideal for installation in Pro-Sound loudspeaker boxes and thus enable the use of these boxes in 100 V systems.

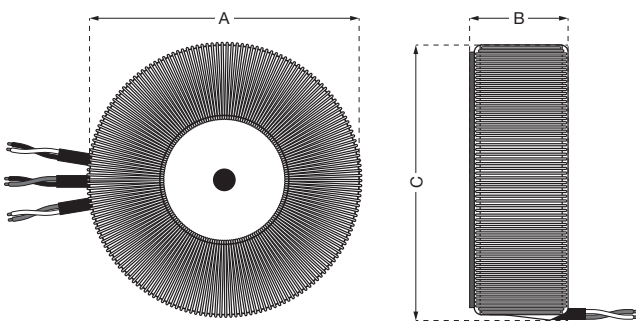
These ring core transformers are relatively compact and lightweight in view of the power level. They produce less mechanical hum and have very low no-load losses.

Of course, these 100V-transformers are characterized by their simple central fixture for other applications as flexible.

Please consider the following features:

- High quality matching transformer with excellent operating frequency from 34Hz to 27kHz.
- 300 mm long lead outputs allow flexible connection for different applications.
- The practical central fastening and a foam rubber pad is already attached to the transformer.
- Manufactured according to standards EN 61558 VDE 0570 and IEC 085.

★



Modell	Dimensions (see drawing)		
	A	B	C
HP-101 R	92 mm	42 mm	96 mm
HP-201 R	112 mm	69 mm	115 mm

Technical data	HP-101 R	HP-201 R
Primary	100V - 100 W	100V - 200 W
Secondary	8, 12, 16 ohms	
Frequency range (-2 dB)	34 - 27.000 Hz	
Efficiency	90%	
Dimensions HxWxD (mm)	Ø 96 mm, H 42 mm	Ø 115 mm, H 69 mm
Weight	1,3 kg	2,9 kg

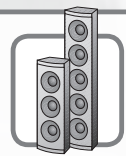
## Model designations

- 100V Ring Core Transformer (100 W) ..... **HP-101 R**  
 100V Ring Core Transformer (200 W) ..... **HP-201 R**





## Church Sound Systems



**9**  
Page  
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Part 9



9 IN - 4 OUT MATRIX

APM-941 D

AMP 1: 400 W  
AMP 2: 100 W  
with DSP



As table version or suitable for 19" installation.

## Description

### Premium acoustics for religious buildings:

The automatic mixing amplifiers were specially developed for sound reinforcement and use in acoustically difficult buildings (building acoustics). Instead of a system cabinet, these „church amplifiers“ can achieve outstanding results in acoustically demanding buildings.

Fully automatic, digital automatic mixing amplifier with two power amplifiers (400 W + 100 W). It is freely programmable and has an automatic switching (calendar function) of pre-sets 1 and 2.

The mixer amplifier has a programmable priority for conference modes, input audio matrix, audio DSP system, „SOFT-START“ function and optional cable remote control for remote switching of pre-sets.

Through the input matrix „MAINSUM 1“ and „MAINSUM 2“ all 9 input channels can be assigned to the DSP outputs 1 to 3 and 4.

Please consider the following features:

- Automatic amplifier with DeEsser, compressor expander, limiter, gate and USB MP3 player.
- Automatic system with DIGITAL SIGNAL DELAY FIELD and automatic input control.
- Relay button (activation at Pre-set 2)
- 100V, 70V, 50V, 8 and 4 ohm speaker outputs.
- Microphone automatic switch system with control LEDs

- Feedback limiter „Phase shifter“ or „adaptability-Automatic“
- Pre-set selector switch with freely programmable calendar function (Day / week / month / year programs) for automatic switching, e.g. on Sunday Mass
- Parametric EQ (10x input / 4x 5 output)
- Delay per NF output up to 85 meters
- Two separate loudspeaker lines with volume control (Amplifier Zone 1: 400 W; Amplifier Zone 2: 100 W) Control software via USB interface

★

Technical data	APM-941 D
Output power	AMP-1: 400W/100V + AMP-2: 100W/100V
Frequency range (-3 dB)	40 - 22.000 Hz
Distortion factor	< 0,1 %
Feedback Limiter:	Automatic feedback suppressor in the range 20 Hz to 20 kHz or digital frequency shifter (Displacement 1.7 Hz, 2 Hz, 3 Hz)
Sound control inputs (±12dB)	2-Band EQ: LOW 100 Hz; HIGH 10 kHz
Inputs	8x MIC / LINE (-40 to -15 dB), 1.6 k or LINE (-15 to +5 dB), 10 kΩ; 1x LINE (CH-9)
DSP Outputs/Audio matrix	OUT 1 bis 4, MAINSUM 1, MAINSUM 2
Limiter (-24 dB to +6 dB)	Limiter 1 - Group 1; Limiter 2 - Group 2
DSP signal matrix	IN 1 to OUT 1 - 3 + 4; IN 2 to OUT 4
Presets	Relay control panel with automatic switching at PRESET election
Phantom power	24V DC, switchable to each input (1 - 8), DIP-1
Input low-cut filter	switchable for each input (1 - 8), DIP-3
Input sensitivity MIC/LINE	switchable for each input (1 - 8), DIP-2
Power supply	230 V AC @ 50/60 Hz
Dimensions (WxHxD)	(485 with angle) 443 x 135 x 340 mm; 3 RU
Colour / Weight	graphite, approx. 12 kg

## Model designation

Digital Mixing Amplifier, 400W + 100W, 9 Inputs, 100V ..... **APM-941 D**  
with DSP function, incl. 19" Mounting bracket

# DIGITAL MIXING AMPLIFIER (AUTOMATIC, WITH DSP)

# RCS

APM-720 D  
**200 W**  
with DSP

**MATRIX 7 IN - 2 OUT**

MADE IN EUROPE

**NEW**



## Description

### Premium acoustics for religious buildings:

The automatic mixing amplifiers were specially developed for sound reinforcement and use in acoustically difficult buildings (building acoustics). Instead of a system cabinet, these „church amplifiers“ can achieve outstanding results in acoustically demanding buildings.

The automatic mixer amplifier is equipped with a 200 watt power amplifier.

The mixer amplifier has 7 inputs and 3 audio outputs, audio DSP system, MIC / LINE selector, automatic NOISE-GATE system, „SOFT START“ function, and USB SD player.

Remote interface for wired remote control or manual switching between the two freely programmable PRESETS 1 and 2.

Through the input matrix „MAINSUM 1“ and „MAINSUM 2“ all 7 input channels can be assigned to the DSP outputs.

Please consider the following features:

- Automatic amplifier with USB MP3 player
- Automatic input (NOISE-GATE) system and audio signal limiter and NOISE GATE (Master)
- Relay button (activation at Preset 2) ● 100V, 70V, 50V, 8 and 4 Ohm speaker outputs.
- Feedback limiter „Phase shifter“ or „adaptability-Automatic“
- Microphone automatic switch system with control LEDs
- Two pre set selector switches (freely programmable)

- 15-band input parametric EQ with 5 parametric filters each
- Delay per NF output up to 85 meters
- Two 100V line outputs, one of which is a separate speaker line with volume control
- Programming is possible using the MWL-Control software or the SETTINGS / ENTER dial

★

Technical data	APM-720 D
Output power	200W/100V
Frequency range (-3 dB)	40 – 22.000 Hz
Distortion factor	< 0,1 %
Feedback Limiter	Automatic feedback suppressor in the range 20 Hz to 20 kHz or digital frequency shifter (Displacement 1.7 Hz, 2 Hz, 3 Hz)
Sound control inputs (±12dB)	2-Band EQ: LOW 100 Hz; HIGH 10 kHz
Inputs	6x MIC/LINE (-40 to -15 dB), 1,6 kΩ or LINE (-15 bis +5 dB), 10 kΩ; 1x LINE (CH-7)
DSP outputs	MIX-OUT with MAINSUM 2 output, Post-Master, Pre-Master
Limiter	-24 dB bis +6 dB
DSP signal matrix	for inputs 1-6 MIC / LINE and 7 LINE
Presets	2 with plain text
Phantom power	24V DC, switchable to each input (1 – 8), DIP-1
Input low-cut filter	switchable for each input (1 – 8), DIP-3
Input sensitivity MIC/LINE	switchable for each input (1 – 8), DIP-2
Power supply	230V AC @ 50/60 Hz
Dimensions (WxHxD)	(485 with angle) 443 x 135 x 340 mm; 3 RU
Colour / Weight	graphite , approx. 12 kg

## Model designation

Digital Mixing Amplifier, 200W, 7 Inputs, 100V ..... **APM-720 D**  
with DSP function, incl. 19" Mounting bracket



APM-740A  
**400W**



## Description

### Premium acoustics for religious buildings:

The automatic mixing amplifiers were specially developed for sound reinforcement and use in acoustically difficult buildings (building acoustics). Instead of a system cabinet, these „church amplifiers“ can achieve outstanding results in acoustically demanding buildings.

The automatic mixer amplifier is equipped with a 400 watt power amplifier.

It has 7 MIC / LINE and 3 LINE inputs, a parametric equalizer, feedback limiter (SHIFTER) and 21-point graphic equalizer. All these parameters provide even better room acoustics and the paragraph equalizer for more precise spatial equalization.

All inputs and the MASTER control are equipped with separate treble and bass controls (LF / HF-EQ) and with sensitivity control (GAIN) on the back.

In addition, the mixers have an additional speaker line (100 V) with separate volume control and „SOFT-START“ for even better speaker protection.

Please consider the following features:

- 100V, 70V, 50V, 8 and 4 ohm speaker outputs.
- LED level, protect and clip indicators
- Recessed EQ controls with parametric and 21-band graphic equalizer

- Feedback limiter (shifter) with bypass switch, CUT filter 100 Hz, feedback limiter and phase shifter
- Separate speaker line with volume control, e.g. for control speakers.
- 24V DC phantom power.
- Automatic noise-gate system.
- Automatic system control LED's and LED level indicator

★

Technical data	APM-740 A
Output power	400W/100V
Frequency range (-3 dB)	40 – 22.000 Hz
External voltage margin	Sum closed 97 dB
Distortion factor	< 0,05 %
Feedback Limiter:	Automatic feedback suppressor in the range 20 Hz to 20 kHz or frequency shifter (Displacement 1.7 Hz, 2 Hz, 3 Hz)
Sound control inputs (±12dB)	2-Band EQ: LOW 100 Hz; HIGH 10 kHz
Inputs	automatic, 8x MIC / LINE (MIC 1-100mV, 1 kΩ / LINE 100mV-1V, 300 kΩ); symm., XLR-Neutrik; unbalanced. (100mV-1V), 300 kΩ; Jack / Cinch (Neutrik)
Outputs	symm. LINE-Out, Post-Master, Pre-Master (0 dB)
Automatic Mixer	Response threshold of the acoustic switch 30uV adjustable up to 0.33mV (internal)
Shifter (Bypass)	shift 3 Hz to 8 Hz / 20 Hz to 20 kHz
Phantom power	48V DC, (IEC-Norm)
Cut / Filter	switchable for each input 1 – 8 (100 Hz)
Protection circuits	switch-on delay, current limitation (short-circuit), Over temperature protection, negative load, limiter
Power supply	230V AC @ 50/60 Hz
Dimensions (WxHxD)	(485 with angle) 443 x 138 x 335 mm; 3 RU
Colour / Weight	graphite, approx. 12 kg

## Model designation

**Automatic Mixing Amplifier, 400 W**, 100V  
incl. 19" Mounting bracket

**APM-740A**

## Electret - gooseneck microphone

(Phantom power 20-48V DC)

High quality gooseneck microphone. Specially designed for the church PA and speakers.

In the upper part of the gooseneck 12 white LEDs are integrated (manuscript illumination).

The 6 mm Ø gooseneck with metal microphone head includes a filter for suppression of pop noises and is conviced by a straight-line Frequency range with a high reverse damping.



Technical data	EXM-430S
Frequency range	30 Hz – 18.000 Hz
Polar pattern	Hyper cardioid
Nominal impedance	200 ohms, symmetrical
Field Sensitivity (S/N)	16 mV / Pa.@1kHz
Max. Input-Level	120 dB (SPL@0.5% THD)
Power supply	Phantom power (20 – 52V DC)
Dimensions and weight	Ø 21 mm x 430 mm (L); 200 g

**Gooseneck Microphone** ..... **EXM-430S**  
silver-matt, XLR (male), incl. windscreen

## Electret - gooseneck microphone with lighting

(Phantom power 20-48V DC)

High quality gooseneck microphone with LED illumination. Specially designed for the church PA and speakers.

The model is equipped with a click-free switch and an LED power indicator.

The 6 mm Ø gooseneck with metal microphone head incorporates a filter to suppress pop noises and convinces with a rectilinear Frequency range with a high reverse attenuation.



Technical data	EXM-435 SL
Frequency range	30 Hz – 18.000 Hz
Polar pattern	Hyper cardioid
Nominal impedance	200 ohms, symmetrical
Field Sensitivity (S/N)	16 mV / Pa.@1kHz
Max. Input-Level	120 dB (SPL@0.5% THD)
Power supply	Phantom power (20 – 52V DC)
Dimensions and weight	Ø 21 mm x 475 mm (L); 204 g

**Gooseneck Microphone, with LED Illumination** . . . . **EXM-435 SL**  
silver-matt, XLR (male), incl. windscreen

## XLR adapter flange (for screw mounting)

Microphone adapter with mounting flange, hole for cable feedthrough, 5 m. Symm. Microphone cable, XLR plug, XLR coupling with fixing and locking screw.

For easy installation of the XLR microphone on intercoms, Ambos, consoles, tables, etc.



**XLR adapter flange** (for screw mounting) ..... **SFX-301**  
silver

## XLR adapter flange (for screw mounting)

Microphone adapter with M-10 threaded bolt and cable feedthrough, 5 m. Symm. Microphone cable, XLR plug, XLR connector with fixing and locking screw.

To install the XLR microphone in speakers, ambos, consoles, tables, etc.



**XLR adapter flange, for Flush mounting** ..... **SFX-302**  
silver-matt, with M10 threaded bolt and cable gland

## Floor stand (with XLR connection)

Modern in design, stable and height-adjustable floor stand with XLR adapter (suitable for example EXM-430S / 435 SL).

A heavy cast round base ensures optimum stability and low risk of tripping. Height adjustable in length from 700 to 1100 mm.

The microphone connection cable is made by telescopic tube of the tripod and at the end with XLR plug. The tripod telescope is 1-fold extendable, the cable length is 5 meters.

The stand has a diameter of 180 mm and is equipped with a rubber-damped profile rubber ring to avoid unwanted transmission noises.



**Floor stand, with XLR connection** ..... **BS-150X**  
silver



2-way-system



## Description

The loudspeaker columns of the Xorva ›C1‹ series are made up of neodymium tweeter horns and specially designed 2 broadband chassis.

Xorva ›C1‹ sound columns have been specially developed for sound transmission in acoustically difficult rooms with long reverberation times such as cathedrals, churches, mosques, congress halls and for all rooms with unfavourable acoustic conditions.

The targeted sound radiation in vertical planes causes an increased directivity and the broad Frequency range.

These speaker columns are characterized by the natural and balanced sound quality for excellent speech intelligibility and in supporting the SUBBass perfect music and voice transmission.

Please consider the following features:

- The C1 series is equipped with high-quality 100 V transformers, which are each adaptable to 1/1, 1/2 and 1/4 power.
- A ball joint bracket and mounting bracket are included with each speaker pillar. They allow the pivoting and tilting of the column.
- Each speaker can be painted in all RAL colours (also later)

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Technical data	XC-1030	XC-1045	XC-1060	XC-1090	XC-1120
Nominal load capacity/program	50/30 W	80/45 W	100/60 W	150/90 W	180/120 W
Adjustments at 100 V	30/15/7,5 W	45/22,5/11,25 W	60/30/15 W	90/45/22,5 W	120/60/30 W
Speaker equipment	6x 2" LF/MF 1x HF Neodymium	9x 2" LF/MF 2x HF Neodymium	12x 2" LF/MF 2x HF Neodymium	16x 2" LF/MF 3x HF Neodymium	20x 2" LF/MF 4x HF Neodymium
Stand hole	–	–	–	–	–
Range @SPL/95 dB	5 m	8 m	10 m	12 m	15 m
Frequency range (+/- 3 dB)	185 - 20.000 Hz	180 - 20.000 Hz	175 - 20.000 Hz	165 - 20.000 Hz	155 - 20.000 Hz
Impedance (nominal)	333 ohms at 100 V	222 ohms at 100 V	166 ohms at 100 V	111 ohms at 100 V	83 ohms at 100 V
Connections	Screw terminal	Screw terminal	Screw terminal	Screw terminal	Screw terminal
Beam angle (H x V)	90° x 40°	90° x 30°	90° x 25°	90° x 20°	90° x 15°
Dimensions (WxHxD)/weight	67 x 600 x 73 mm; 2,8 kg	67 x 800 x 73 mm; 3,7 kg	67 x 1.100 x 73 mm; 4,7 kg	67 x 1.600 x 73 mm; 7,0 kg	67 x 1.760 x 73 mm; 10,0 kg
Material, colour	aluminium powder-coated, light grey (RAL 9016)				

## Model designations

<b>Xorva ›C1‹ Speaker columns, 30 W,</b> 100V, 2-way-system, aluminium .....	<b>XC-1030</b>
<b>Xorva ›C1‹ Speaker columns, 45 W,</b> 100V, 2-way-system, aluminium .....	<b>XC-1045</b>
<b>Xorva ›C1‹ Speaker columns, 60 W,</b> 100V, 2-way-system, aluminium .....	<b>XC-1060</b>
<b>Xorva ›C1‹ Speaker columns, 90 W,</b> 100V, 2-way-system, aluminium .....	<b>XC-1090</b>
<b>Xorva ›C1‹ Speaker columns, 100 W,</b> 100V, 2-way-system, aluminium .....	<b>XC-1120</b>

## Description

The Xorva »C4« series new passive loudspeaker columns are combined in the HF frequency range with neodymium tweeter ball dome systems and special spaced-apart ferrite 3.5" broadband chassis.

Through the use of internal, passive frequency ranges, an opening angle in the vertical planes has been achieved for the XC-4060 versions of 30 °, XC-4080 of 25 ° and XC-4100 of 20 °.

This new series of clay pillars is specially designed for sound transmission in difficult acoustical spaces with long reverberation times, e.g. in cathedrals, churches, congress halls as well as all rooms with unfavourable acoustic conditions developed.

The housing made of specially shaped aluminum profile is particularly stable and elegant in design and adapts well to the environment. It can be coated on customer request according to RAL color pattern.

Please consider the following features:

- The C4 series is equipped with high-quality 100 V transformers, which are each adaptable to 1/1, 1/2 and 1/4 power.
- One bracket is included with each speaker column. Thus, the installation of the clay column is a light business.
- Each speaker pillar can be painted in all RAL colours.
- All columns should be installed as specified.

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2-way-system



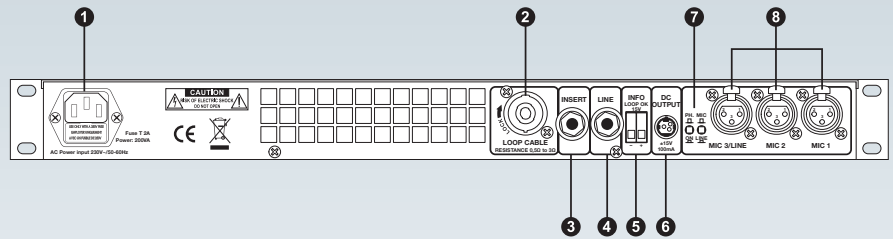
Technical data	XC-4030	XC-4040	XC-4060	XC-4080	XC-4100
Nominal load capacity/program	50/30 W	60/40 W	80/60 W	110/80 W	140/100 W
Adjustments at 100 V	30/15/7,5 W	40/20/10 W	60/30/15 W	80/40/20 W	100/50/25 W
Speaker equipment	3x 3,5" LF/MF 1x HF Neodymium	4x 3,5" LF/MF 1x HF Neodymium	6x 3,5" LF/MF 1x HF Neodymium	8x 3,5" LF/MF 1x HF Neodymium	10x 3,5" LF/MF 1x HF Neodymium
Stand hole	-	-	-	-	-
Range @ SPL/95 dB	3 m	6 m	9 m	12 m	15 m
Frequency range (+/- 3 dB)	100 - 18.000 Hz	90 - 18.000 Hz	90 - 18.000 Hz	80 - 18.000 Hz	80 - 18.000 Hz
Impedance (nominal)	333 ohms at 100 V	250 ohms at 100 V	166 ohms at 100 V	125 ohms at 100 V	100 ohms at 100 V
Connections	Screw terminal	Screw terminal	Screw terminal	Screw terminal	Screw terminal
Beam angle (H x V)	90° x 40°	120° x 35°	120° x 30°	120° x 25°	120° x 20°
Dimensions (WxHxD)/weight	103x450x113 mm; 2,0 kg	103x550x113 mm; 4,5 kg	103x800x113 mm; 9,0 kg	103x1.020x113 mm; 11,0 kg	103x1.200x113 mm; 14,0 kg
Material, colour	aluminium powder-coated, light grey (RAL 9016)				

## Model designations

<b>Xorva »C4« Speaker columns, 30W, 100V, 2-way-system, aluminium</b> .....	<b>XC-4030</b>
<b>Xorva »C4« Speaker columns, 40W, 100V, 2-way-system, aluminium</b> .....	<b>XC-4040</b>
<b>Xorva »C4« Speaker columns, 60W, 100V, 2-way-system, aluminium</b> .....	<b>XC-4060</b>
<b>Xorva »C4« Speaker columns, 80W, 100V, 2-way-system, aluminium</b> .....	<b>XC-4080</b>
<b>Xorva »C4« Speaker columns, 100W, 100V, 2-way-system, aluminium</b> .....	<b>XC-4100</b>

Rear view

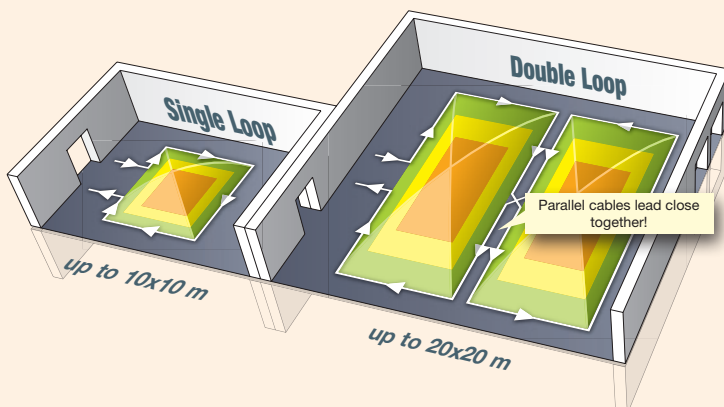
- 1 AC power cord
- 2 Speakon® socket for connecting the loop cables
- 3 Unbalanced audio signals Input for connecting external devices
- 4 Balanced audio signal input (LINE level 0 dB) to 1/4 „jack
- 5 INFO LOOP OK, fault message output
- 6 DC output (phantom power)
- 7 MIC / LINE mode Switch for microphone or LINE level Switch for switching phantom power
- 8 MIC1 and MIC2 / LINE inputs on XLR, balanced



Technical data	ISV-300 A
Compressor/Limiter	Automatic (0 dB to 18 dB)
Frequency range (amplifier/loop)	20 Hz - 20.000 Hz; 80 Hz - 7.500 kHz (-1.5dB)
Distortion factor	Better than 0.25 %
Loop impedance	0.5 - 3.0 Ω
Cover area	approx. 450 m <sup>2</sup> (depending on the loops)
RMS current (at 1 kHz)	4.5 A
Audio Inputs/Outputs	MIC 1, MIC 2 / LINE, balanced to XLR, INSERT, 0dB LINE Input to jack, unbalanced
Audio sensitivity (MIC/LINE)	-50 dB / -10 dB
Phantom power	switchable 12V DC
Info LOOP/AMP CONTROL	15V DC
AMP-LOOP-Output power (Pmax.)	135 W
Temperature monitoring (AMP)	system deactivation at 92 ° C, system activation at 60 ° C
Equalization-EQ (LF-EQ / HF-EQ)	+/- 12 dB
Frequency correction on (LOOP-OUT)	MLC control
Protection circuits	current limitation (short circuit), over-temperature protection, "Soft-Start"
Power supply / power	230V AC - 50/60 Hz; 300 VA
Dimensions (WxHxD) / weight	443 mm x 44 mm x 200 mm; approx. 4.0 kg

### EXAMPLE OF USE | Installation possibility of induction loops

up to 450 m<sup>2</sup>



In the rooms to be supplied a single-pole wire loop is laid.

In particular arrangements, such as Listener area in several blocks, blanking of certain areas, etc., it may come to other loop forms (double loop, single-eight-form, double-eight-form).



## Description

The ISV-300A represents a loop amplifier as a professional solution for the construction of induction loops. The loop amplifier for audio transmission is widely used to provide hearing aids with inductive audio signals.

The ISV-300A Induction Loop Amplifier has been developed as a high-quality LOOP amplifier for middle inductive loop sizes.

The system is characterized by particularly easy installation, customer-oriented operation and easy use of the device for optimal performance.

Induction loop amplifiers are very often used in churches, cinemas, theatres, outlets, bank counters, interpreting systems or DRIVE-IN / DRIVE-THROUGH, so that hearing aid users under heavy acoustic operations (background noise, reverberation, etc.) by the inductive coupling of hearing aids, the useful signal (Audio transmission) can hear much better without disturbing noises.

By transmitting an audio signal through the induction loop, an acceptable signal-to-noise ratio is achieved.

A purely acoustic, direct sound transmission (between loud-speaker and hearing aid) through reverberation and background noises considerably worsens the perception of the useful signal by the hearing device wearer.

Please consider the following features:

- Depending on the loop design, the coverage area is up to 450 m<sup>2</sup>.
- Equalization by 2-point LF / HF equalizer.
- "MLC" control for frequency error correction.
- All controls are recessed and provide protection against incorrect operation.
- Equipped with protection circuit for short circuit, overheating, no load, overload and overload.


★

**RECEIVER | optional**

### Induction Loop Receiver

With the ISV-001 T receiver, a loop system can be quickly and easily checked or maintained. It is therefore particularly suitable for responsible personnel where induction transmission is installed.

It can be used as a pure audio receiver for the people whose hearing aid does not have a „T-position“ or for monitoring or controlling the field strength and quality of the transmission of the induction loop system.



**Induction Loop Receiver**, ..... **ISV-001 T**

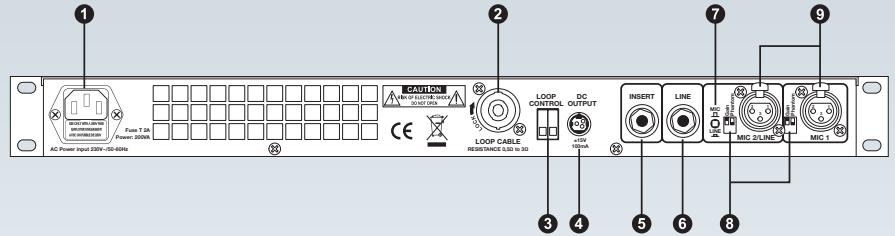
including headphones, dimensions (WxHxD): 67x90x25 mm

**Model designation**

**Induction Loop Amplifier** ..... **ISV-300 A**  
for loop surfaces up to 450 square meters, 1 RU

### Rear view

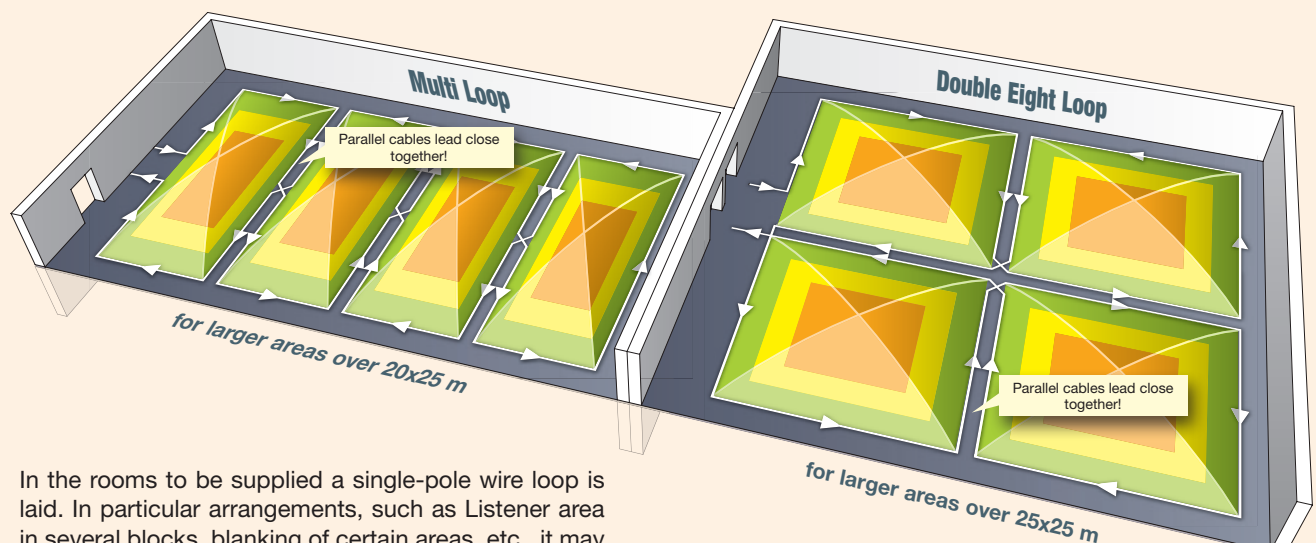
- 1 AC power cord
- 2 Speakon® socket for connecting the loop cables
- 3 LOOP CONTROL, fault message output
- 4 DC output (phantom power)
- 5 Unbalanced audio signal Input for connecting external devices
- 6 Balanced audio signal input (LINE level 0 dB) to 1/4 „jack.
- 7 MIC / LINE Mode switch for microphone or LINE level
- 8 Switch / DIP switches for switching gain and phantom power
- 9 MIC1 and MIC2 / LINE inputs on XLR, balanced



Technical data	ISV-500 A
Compressor/Limiter	Automatic (3 dB to 33 dB)
Frequency range (amplifier/loop)	20Hz - 20.000 Hz; 80 Hz - 6.500 kHz (-1,5dB)
Distortion factor	Better than 0.25 %
Loop impedance	0.5 - 4.0 Ω
Cover area	approx. 1000 m <sup>2</sup> (depending on the loops)
RMS current (at 1 kHz)	9.4 A
Audio Inputs/Outputs	MIC 1, MIC 2 / LINE, balanced to XLR, INSERT, 0dB LINE Input to jack, unbalanced
Audio sensitivity (MIC/LINE)	-50 dB – -70 dB / 0 dB
Phantom power	switchable 24V DC (DIP-switch)
Info LOOP/AMP CONTROL	28V DC/2A, 125V AC/0.5A
AMP-LOOP-Output power (Pmax.)	180 W
Temperature monitoring (AMP)	system deactivation at 92 ° C, system activation at 60 ° C
Equalization-EQ (LF-EQ / HF-EQ)	+/- 12 dB
Frequency correction on (LOOP-OUT)	MLC control
Protection circuits	current limitation (short circuit), over-temperature protection, "Soft-Start", impedance measurement
Power supply / power	230V AC - 50/60 Hz; 300 VA
Dimensions (WxHxD) / weight	443 mm x 44 mm x 200 mm; approx. 4,5 kg

### EXAMPLE OF USE | Installation possibility of induction loops

300m<sup>2</sup> to 1.000m<sup>2</sup>



In the rooms to be supplied a single-pole wire loop is laid. In particular arrangements, such as Listener area in several blocks, blanking of certain areas, etc., it may come to other loop forms (double loop, single-eight-form, double-eight-form).

# INDUCTION LOOP AMPLIFIERS up to 1.000 m<sup>2</sup>

WITH AUTOMATIC ADJUSTMENT

# RCS



up to 1.000m<sup>2</sup>

up to 1.000 m<sup>2</sup>



## Description

Description The newly developed ISV-500A represents a loop amplifier as a professional solution for the construction of induction loops. The automatic loop amplifier for audio frequencies is widely used to supply hearing aids with inductive audio signals.

Induction loop amplifiers are very common in churches, cinemas, theatres, outlets, bank counters, interpreters

Systems or DRIVE IN / DRIVE-THROUGH used so that hearing aid wearer under heavy acoustic operations (background noise, reverberation, etc.) by the inductive coupling of hearing aids the useful signal (audio transmission) can hear much better without disturbing noises.

By transmitting an audio signal through the induction loop, an acceptable signal-to-noise ratio is achieved.

A purely acoustic, direct sound transmission (between loudspeaker and hearing aid) through reverberation and background noises considerably worsens the perception of the useful signal by the hearing device wearer..

Please consider the following features:

- Digital Automatic Audio Signal Compressor.
- Depending on the loop design, the coverage area is up to 1,000 m<sup>2</sup>.
- Loop detector for automatic measurement and power matching to loop impedance.
- Equalization by 2-point LF / HF equalizer.
- „MLC“ control for frequency error correction.
- All controls are recessed and provide protection against incorrect operation.
- Equipped with protection circuit at short circuit, Overheating, Idle, and Overload.

★

**RECEIVER | optional**

### Induction Loop Receiver

With the ISV-001 T receiver, a loop system can be quickly and easily checked or maintained. It is therefore particularly suitable for responsible personnel where induction transmission is installed.

It can be used as a pure audio receiver for the people whose hearing aid does not have a „T-position“ or for monitoring or controlling the field strength and quality of the transmission of the induction loop system.



**Induction Loop Receiver, ISV-001 T**  
including headphones, dimensions (WxHxD): 67x90x25 mm

## Model designation

**Automatic Induction Loop Amplifier..... ISV-500 A**  
For loop surfaces up to 1.000 square meters; 1 RU



### Description

The device allows the construction of an induction loop double-loop system by phase shifting.

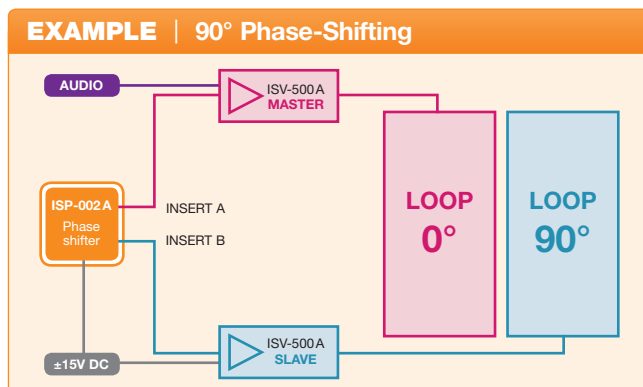
Due to the phase modulation, the audio signal is shifted by 90 ° phases and forwarded to the second loop amplifier of the ISV series, or to the second induction loop. The first audio loop amplifier operates without phase shift at 0 °.

Such double-loop systems are recommended for large areas and with large induction field influence by metal objects in the concrete. These are used, for example, in large churches, exhibition halls, railway stations, schools, gyms, etc.

Please consider the following features:

- Compatibility according to EN 60118-4
- By laying a double-loop system with phase shift, constant field strength is achieved.
- Advantage of the double-loop system is the up to 4-fold lower loss of the audio loop (low power -large area).

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### Model designation

Phase shifter, for double-loop system ..... **ISP-002 A**



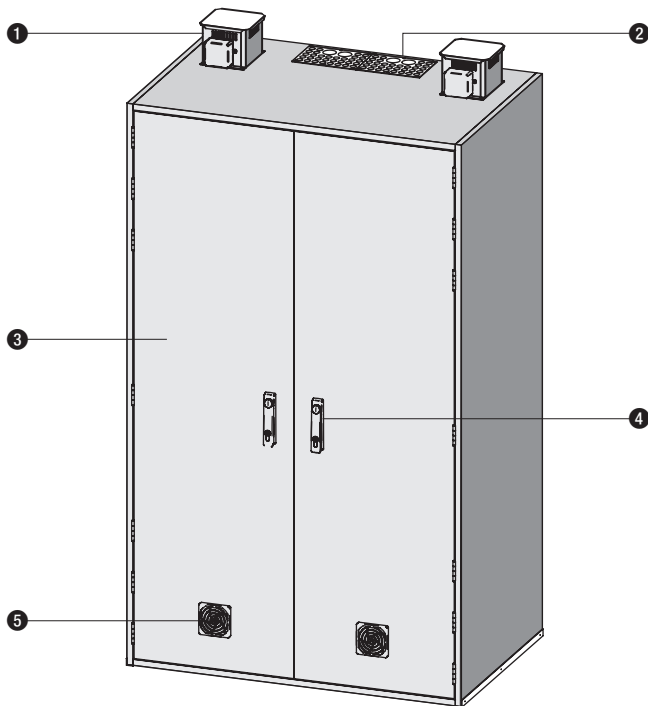
**19" cabinets and accessories**



**10**

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Part 10

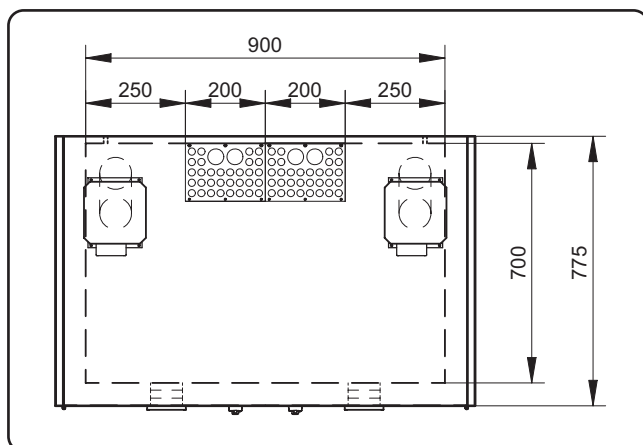


- 1 Active cooling system
- 2 Cable inlet / cable outlet
- 3 Fire protection housing
- 4 Swing lever door handle
- 5 Air inlet

1 RU = 44,45 mm (1 3/4").

H = overall height in mm      h = useable height (for 19"-units) in mm  
 D = overall depth in mm      d = useable depth (for 19"-units) in mm  
 W = overall width in mm      w = useable depth (for 19"-units) in mm

Models	H	W	D	h	w	d	Weight
BSS-3024 C	1570	1050	775	1300	900	700	390 kg
BSS-3030 C	1870	1050	775	1600	900	700	440 kg
BSS-3040 C	2270	1050	775	2000	900	700	515 kg



### Description

BSS series fire protection cabinets are used in all places where voice evacuation systems have to accomplish the demands of E30 (functional endurance over 30 minutes in a case of fire) or F30 (resistance against fire for 30 minutes). BSS series housings are approved by the German construction supervision agency and fulfill all recent safety regulations (approval number Z-86.1-35).

The housings were tested in conjunction with our 19" swing frame cabinets of the RSS series by MPA Stuttgart. The comprehensive test report can be requested if needed.

The design of BSS series is tuned to fit perfectly around the swivel door racks of our RSS series (RSS-5524, RSS-5530, RSS-5540). Due to their spacious dimensions they can of course be used with a variety of other 19" racks as well.

Please consider the following features:

- Fire resistant housing with the capacity to withstand a fire on its outside for 30 minutes
- Complies with the demands of the recent MLAR (German regulation for high buildings)
- Fire resistant plates according to DIN 4102 A1/A2
- 60 minutes fire load dampening (I60)
- Protection class II (IP 54)
- Integrated, powered cooling system(double Ø 80 mm fans)
- Two cable inputs in the top of the housing
- Double door with covered steel hinges
- Upgrade with a special locking cylinder is possible
- Wall mounting kit included
- Colour RAL 7035 (light grey)

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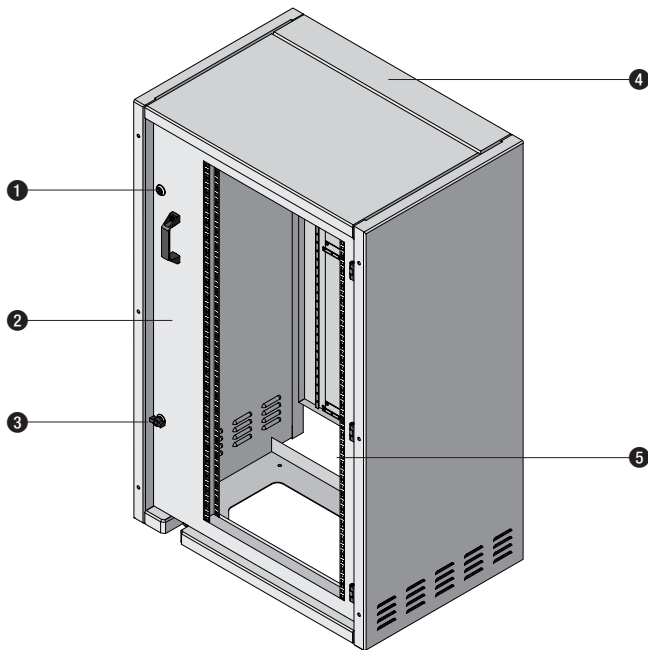


TESTED AND APPROVED  
BY MPA STUTT GART



**Model designations**

Fire Protection Cabinet for RSS-5524, (24 RU) .....	<b>BSS-3024 C</b>
Fire Protection Cabinet for RSS-5530, (30 RU) .....	<b>BSS-3030 C</b>
Fire Protection Cabinet for RSS-5540, (40 RU) .....	<b>BSS-3040 C</b>



- 1 Lockable cylinder lock
- 2 Stable 19" swinging rack
- 3 Universal lock
- 4 RFF-300 (optional)
- 5 19" rackrail with ASA hole pattern

1 RU = 44,45 mm (1 3/4").

**H** = overall height in mm      **h** = useable height (for 19" units) in mm  
**D** = overall depth in mm      **d** = useable depth (frame can be swivel) in mm  
**W** = overall width in mm      **RU** = Rack units

Models	RU	H	h	D	w	W	Weight
RSS-5524	24	1250	1067	550	540	800	93 kg
RSS-5530	30	1515	1334	550	540	800	108 kg
RSS-5540	40	1960	1778	550	540	800	132 kg



The picture shows the additional castor on swinging rack cabinets.

### Description

The RSS series 19" swing frame cabinets presented in this section have been especially developed for the use with audio systems.

The cabinets with a 19" swing frame rack serve to accommodate rackmount devices, subracks, front panels etc. with 19" design according to DIN 41494.

The cabinets feature high-quality design and finish as well as excellent stability, thus complying with the latest standards of manufacture. For example, the rackrails have ASA hole pattern.

Please consider the following features:

- The frame construction consists of extremely stable welded sheet steel sections with holes for floor and wall anchoring. Colour: RAL-7032.
- Safe cooling is ensured through appropriate design of the rear panel (free space of 3 RU at the bottom, perforated vent sections at the top).
- The additional castor for the swing frame rack permits easy pivoting of the rack frame, even when the cabinet is full.
- The opening angle of 170° provides easy access to the rear of the rack, even when devices are mounted in the swing frame rack.
- Cable entry is possible from the top, the bottom or the rear. Mounting facilities for components such as terminal strips, etc. are provided on the rear.
- The 19" rackrails with ASA hole pattern permit mounting of devices from different manufacturers.
- The toughened safety plexiglass doors of the RTS series have keyed cylinder locks and are available for all swing frame rack cabinets of the RSS series. The mounting of the plexiglass doors to the swinging rack cabinets will be carried out by the customer. To provide optimum customer-friendliness, the cabinets have been well prepared in such a way that the requirements for mounting the doors have been reduced to a minimum.
- For devices that do not have a 19" design (HIFI design) a wide range of 19" accessories such as shelves, sliding trays, drawers, blank panels, etc. is available. See „19" accessories“ section in this catalogue.

### 19"-accessory parts

The three-way fan panel, particularly developed for this cabinet, is installed at the cabinet rear side. The outlet air is guided upwards and backwards. The current supply is made by 230 V mains.



**Van panel** ..... **RFF-300**

With heavy rackmount devices the use of a pair of RGL-550 slide rails is recommended.

**Slide rails** ..... **RGL-550**

The optional RST-5500 base is suitable for all cabinets of the RSS series and provides additional room, e.g. for cable management.

**Base**, HxWxD: 200 x 800 x 550 mm (weight 27 kg) ..... **RST-5500**



19" swing frame cabinets, depth 550 mm  
(with plexiglass doors)

19" swing frame cabinets, depth 550 mm  
(without doors)

### Model designations

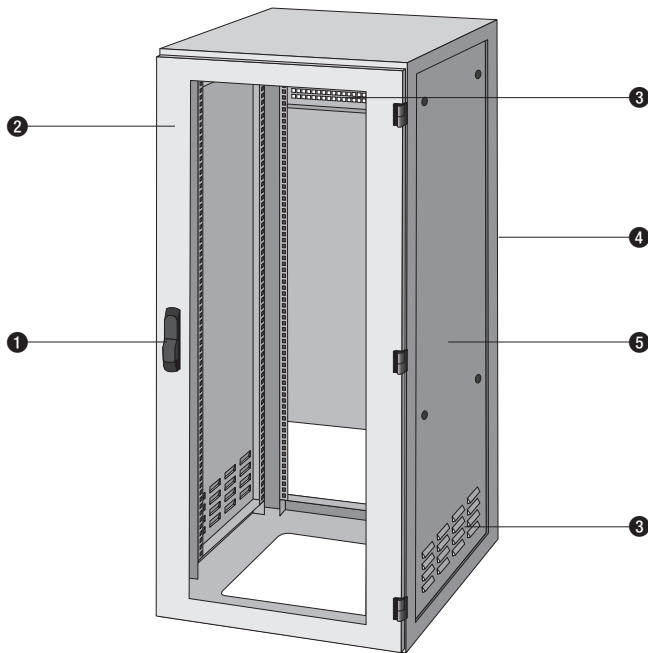
Plexiglass doors

- Plexiglass door**, for RSS-5524, (25 kg) ..... **RTS-024**
- Plexiglass door**, for RSS-5530, (30 kg) ..... **RTS-030**
- Plexiglass door**, for RSS-5540, (39 kg) ..... **RTS-040**

### Model designations

19"-swing frame cabinets

- 19"-Swing Frame Cabinet**, (24 RU) ..... **RSS-5524**
- 19"-Swing Frame Cabinet**, (30 RU) ..... **RSS-5530**
- 19"-Swing Frame Cabinet**, (40 RU) ..... **RSS-5540**



- 1 Handle with grip recess
- 2 Full view plexiglass doors
- 3 Louvers for safe cooling
- 4 Rear panel removable
- 5 Side panel removable

1 RU = 44,45 mm (1¾").

**H** = overall height in mm      **h** = useable height (for 19"-units) in mm  
**D** = overall depth in mm      **d** = useable depth (for 19"-units) in mm  
**W** = overall width in mm      **RU** = Rack units

Models	RU	H	h	D	d	W	Weight
<b>RAB-014B</b>	14	707	630	600	530	570	30,0 kg
<b>RAB-018B</b>	18	885	808	600	530	570	34,0 kg
<b>RAB-024B</b>	24	1152	1075	600	530	570	38,0 kg
<b>RAB-032B</b>	32	1508	1422	600	530	570	50,0 kg
<b>RAB-040B</b>	40	1863	1778	600	530	570	63,0 kg

### Description

The 19" racks of the new RAB series were particularly developed for the professional application in PA and sound systems. They are outstandingly manufactured and correspond in the reference of assembly dimensions and protection class to the current standards.

The cabinets serve as a placement of devices, module carriers, modules as well as accessories of the 19" systems compliant to DIN 41494.

Please consider the following features:

- The extremely stable frame construction consists of welded steel sheet. The housing is completely powder-coated and supplied in the RAL colour 7035.
- The side panels are removable, which simplifies the installation of devices and their wiring significantly.
- For all models of the RAB series a plexiglass door is available, which can be locked due to two cylinder locks, in the scope of supply.
- An optimal ventilation of the system is ensured with the optional active fan panel RFF-200. Two high performance 15 W filter fans provide the necessary air interchange during overheating.
- The use of the base plate (RBP-100), lockable by a sliding mechanism, ensures a dust free draft of air. The cable harness can be comfortably led outside through the foam material catch.
- With heavy rackmount devices the use of a pair of RGL-525 slide rails is recommended.
- For devices that do not have a 19" design (HIFI design) a wide range of 19" accessories such as shelves, sliding trays, drawers, blank panels, etc. is available. See „19" accessories“ section in this catalogue

### 19"-accessory parts

The two-way fan panel, particularly developed for this cabinet, is installed at the cabinet rear side. The current supply is made by 230 V mains.



**Van panel** ..... **RFF-200**

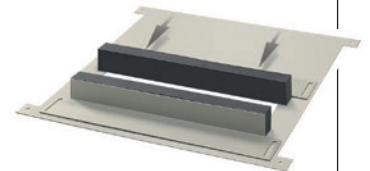
Thermostat controlled with a control range of 0-60°C. The closing contact activates the fan panel RFF-200 when achieving the critical temperature.

**Thermostat** for top hat rail mounting ..... **RTC-200**

The set includes 4 levelling feet for the 19" cabinets of the RAB series which serve to compensate uneven floors.

**Levelling feet** ..... **RJF-300**

The base plate RBP-100 is lockable and prevents the penetration of dust and dirt particles. Cables can be led out tidily.



**Base plate** ..... **RBP-100**

This extremely stable set of castor bases includes 2 fixed castors and 2 swivel castors with brakes (400 kg max. load).

**Castor base set** ..... **RDR-350**

With heavy rackmount devices the use of a pair of RGL-525 sliding rails is recommended.

**Sliding rails** ..... **RGL-525B**



**Note:** When comparing prices, please take into account, our cabinets of the RAB series are delivered completely assembled and packaged.

**Model designations**

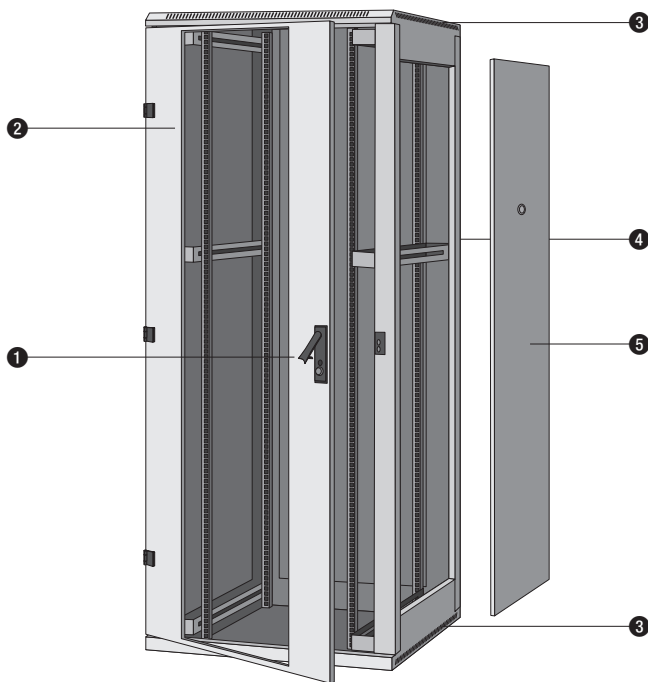
Plexiglass doors for 19"-cabinets »RAB«

<b>Plexiglass door, (8 RU)</b> .....	<b>RTB-008 B</b>
<b>Plexiglass door, (14 RU)</b> .....	<b>RTB-014 B</b>
<b>Plexiglass door, (18 RU)</b> .....	<b>RTB-018 B</b>
<b>Plexiglass door, (24 RU)</b> .....	<b>RTB-024 B</b>
<b>Plexiglass door, (32 RU)</b> .....	<b>RTB-032 B</b>
<b>Plexiglass door, (40 RU)</b> .....	<b>RTB-040 B</b>

**Model designations**

19"-cabinets without doors

<b>19"-Cabinet, (8 RU)</b> .....	<b>RAB-008 B</b>
<b>19"-Cabinet, (14 RU)</b> .....	<b>RAB-014 B</b>
<b>19"-Cabinet, (18 RU)</b> .....	<b>RAB-018 B</b>
<b>19"-Cabinet, (24 RU)</b> .....	<b>RAB-024 B</b>
<b>19"-Cabinet, (32 RU)</b> .....	<b>RAB-032 B</b>
<b>19"-Cabinet, (40 RU)</b> .....	<b>RAB-040 B</b>



- 1 Handle with grip recess
- 2 Full view plexiglass doors
- 3 Louvers for safe cooling
- 4 Rear panel removable
- 5 Side panel removable

1 RU = 44,45 mm (1 3/4").

**H** = overall height in mm      **h** = useable height (for 19"-units) in mm  
**D** = overall depth in mm      **d** = useable depth (for 19"-units) in mm  
**W** = overall width in mm      **RU** = Rack units

Models	RU	H	h	D	d	W	Weight
RVP-015	15	770	668	600	530	600	33,0 kg
RVP-018	18	900	798	600	530	600	38,0 kg
RVP-022	22	1080	978	600	530	600	42,0 kg
RVP-027	27	1300	1198	600	530	600	49,0 kg
RVP-032	32	1525	1423	600	530	600	55,0 kg
RVP-037	37	1750	1648	600	530	600	63,0 kg
RVP-042	42	1970	1868	600	530	600	70,0 kg

## Description

The 19" racks of the new RAB series were particularly developed for the professional application in PA and sound systems. They are outstandingly manufactured and correspond in the reference of assembly dimensions and protection class to the current standards.

The cabinets serve as a placement of devices, module carriers, modules as well as accessories of the 19" systems compliant to DIN 41494.

Please consider the following features:

- The extremely stable frame construction consists of welded steel sheet. The housing is completely powder-coated and supplied in the RAL colour 7035.
- The side panels are removable, which simplifies the installation of devices and their wiring significantly.
- For all models of the RAB series a plexiglass door is available, which can be locked due to two cylinder locks, in the scope of supply.
- An optimal ventilation of the system is ensured with the optional active fan panel RFF-200. Two high performance 15 W filter fans provide the necessary air interchange during overheating.
- The use of the base plate (RBP-100), lockable by a sliding mechanism, ensures a dust free draft of air. The cable harness can be comfortably led outside through the foam material catch.
- With heavy rackmount devices the use of a pair of RGL-525 slide rails is recommended.
- For devices that do not have a 19" design (HIFI design) a wide range of 19" accessories such as shelves, sliding trays, drawers, blank panels, etc. is available. See „19" accessories“ section in this catalogue

## 19"-Accessories

The 2-fan field specially developed for this cabinet is mounted on the rack rails of the cabinet. The power supply is via the 230V mains.



**19"-Belüftungseinheit**, 4 RU, 2 ventilators ..... **RFF-402A**  
 220V / 60W, with bimetal thermostat

Heavy duty roller set, consisting of 2 fixed castors and 2 swivel castors with brakes (load capacity up to 800 kg). Attention: The cabinet is 108 mm higher with wheels!

**Roller Set**, (2 lockable steering wheels and fixed wheels 2) ..... **RDR-400**

Magnetic LED lighting unit 1/2 RU with installation possibility on 19" rails, external power source 230 V, 315 lm.



**LED Lighting Unit**, (1/2 RU) ..... **RLL-400**  
 220V; magnetical, 315 lm

For heavy 19" devices, we recommend using the slide rails for stabilization.

**Slide Rails**, (1 pair) ..... **RGL-400**



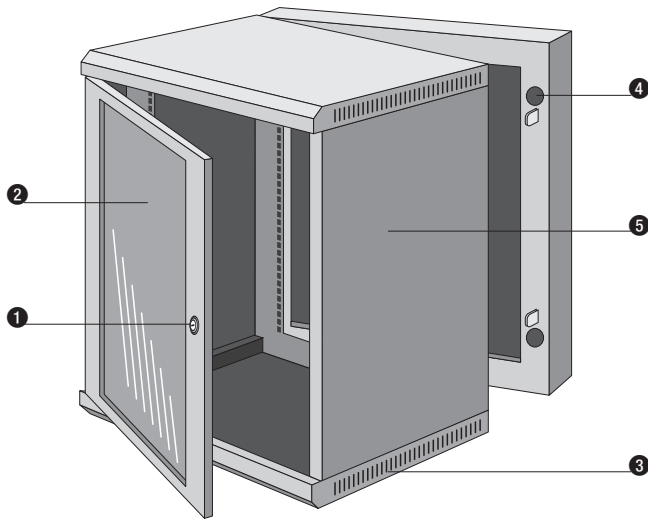
**Note:** When comparing prices, please take into account, our cabinets of the RVP series are delivered completely assembled and packaged.

**Model designations**

19" cabinets with doors (4mm safety glass, hardened)

- 19" Schrank**, (15 RU) with Plexiglass door ..... **RVP-015**
- 19" Schrank**, (18 RU) with Plexiglass door ..... **RVP-018**
- 19" Schrank**, (22 RU) with Plexiglass door ..... **RVP-022**

- 19" Schrank**, (27 RU) with Plexiglass door ..... **RVP-027**
- 19" Schrank**, (32 RU) with Plexiglass door ..... **RVP-032**
- 19" Schrank**, (37 RU) with Plexiglass door ..... **RVP-037**
- 19" Schrank**, (42 RU) with Plexiglass door ..... **RVP-042**



- 1 Cylinder lock
- 2 Swing frame full view plexiglass doors (ESG Security glass, 3 mm)
- 3 Louvers for safe cooling
- 4 Rearpanel for wall assembly
- 5 Swing frame 19" cabinet (main part)

1 RU = 44,45 mm (1 3/4").

**H** = overall height in mm      **D** = overall depth (for 19"-units) in mm  
**W** = overall width in mm      **d** = useable depth (for 19" units) in mm  
**RU** = Rack Units

Models	RU	H	D	d	W	Weight
WSS-006	6	337	520	470	600	22 kg
WSS-009	9	510	520	470	600	29 kg
WSS-012	12	640	520	470	600	34 kg
WSS-015	15	770	520	470	600	36 kg

### Description

19" swing frame cabinets can be used with audio systems and special media technology. The cabinets of the WSS-series are very stable despite a rather low empty weight. A threepart assembly with a swinging, lockable centre section enables an easy insertion and wiring of the devices.

The container is made of sheet steel and is powder coated (light-grey, RAL 7035). The latest passive ventilation system ensures that emerging heat will be directed outwards even if the door is closed.

The door is equipped with an insert of a 4 mm thick safety glass. Depending on the requirements the door can be mounted in order to be opened to the left or to the right.

Please consider the following features:

- Available in 6, 9, 12 and 15 RU.
- 19"-rail can be adjusted continuously in depth on the front.
- Sekurit glass door with safety glass (4mm) with a cylinder lock. Beam width of the door is 180°.
- Right hinged and left hinged door hang.
- Maximum built-in depth: 545 mm
- Grounding safety class system according to EN 60950, DIN VDE 0800, 0804, and 0100.
- Grounding set, drilling template and attachment screw are included in scope of delivery.
- Optional empty blind with integrated strip can be used to comfortably pass cable looms.

★

### 19"-Accessory parts

Implementation panel with strip enables comfortable cable running of single audio cables or entire cable looms. Colour: light grey.



**Implementation-Panel**, (1 RU)..... **RDP-**

Patch panel with 5 cable guides to run patch- and audio-cables neatly. Colour: light grey



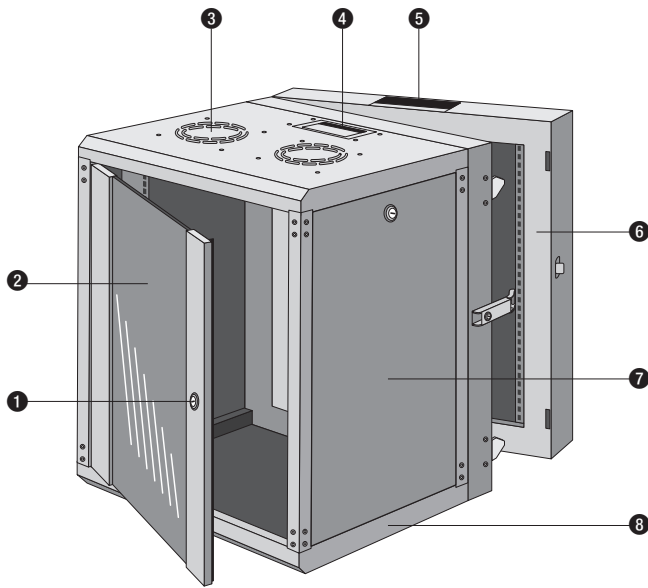
**Patch-Panel**, (1 RU)..... **RRP-**



**Note:** When comparing prices, please take into account, our cabinets of the WSS series are delivered completely assembled and packaged.

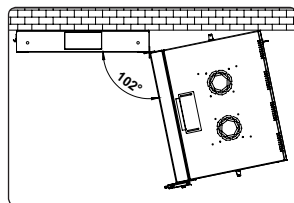
**Model designations**

- 19" Wall-Swing Frame Cabinet, 6 RU, with glass door, load capacity up to 30 kg** ..... **WSS-006**
- 19" Wall-Swing Frame Cabinet, 9 RU, with glass door, load capacity up to 30 kg** ..... **WSS-009**
- 19" Wall-Swing Frame Cabinet, 12 RU, with glass door, load capacity up to 30 kg** ..... **WSS-012**
- 19" Wall-Swing Frame Cabinet, 15 RU, with glass door, load capacity up to 30 kg** ..... **WSS-015**



- 1 Lockable security glass door
- 2 Swing frame full view plexiglass doors (ESG Security glass, 3 mm)
- 3 Two fields for optional cooling fans
- 4 Adjustable opening for cable entry on the housing top and bottom
- 5 Blank panel with brush strip for carrying out wiring harnesses

- 6 Rear panel (wall part) for wall mounting
- 7 Lockable and removable side panels
- 8 Swing frame 19" cabinet (main part)



1 RU = 44,45 mm (1 3/4").

**H** = overall height in mm  
**W** = overall width in mm  
**RU** = Rack Units

**D** = overall depth (for 19"-units) in mm  
**d** = useable depth (for 19" units) in mm

Models	RU	H	D	d	W	Weight
WSH-009	9	512	610	553	600	34 kg
WSH-012	12	646	610	553	600	39 kg
WSH-016	16	824	610	553	600	44 kg

### Description WSH-Series

This series of 19" heavy load wall housing is specifically designed to ensure both optimal wiring and installation of PA and media components. The cabinets provide a variety of features such as an easy-open front door and individually adjustable mounting rails.

The 3-piece construction with swivel, lockable middle section for a comfortable installing and wiring of the devices.

The housing made of 1.5 mm thick sheet steel powder coated light gray (RAL 7035). With a new, passive ventilation system resulting heat is conducted safely outside with the door closed.

The access on the top and bottom and on the sides of each wall housing, the installation of wiring make very simple, flexible and time saving.

The entire housing can be mounted left or right opening as needed.

Please consider the following features:

- Available in 9, 12 and 16 RU.
- Side panels detachable and lockable.
- 19"-rail front adjustable in depth.
- Sekurit glass door with toughened safety glass (4 mm) and cylinder lock. Door opening angle 180 °.
- Ventilation slots for active and passive ventilation.
- Door opens on the left or right.
- Maximum installation depth: 553 mm
- Cable entry on top and bottom.
- Includes 8 pcs. 19" mounting screws.
- Blank panel with integral brush strip for comfortable carrying of cables.

★

### 19"-Accessory parts

Implementation panel with strip enables comfortable cable running of single audio cables or entire cable looms. Colour: light grey.

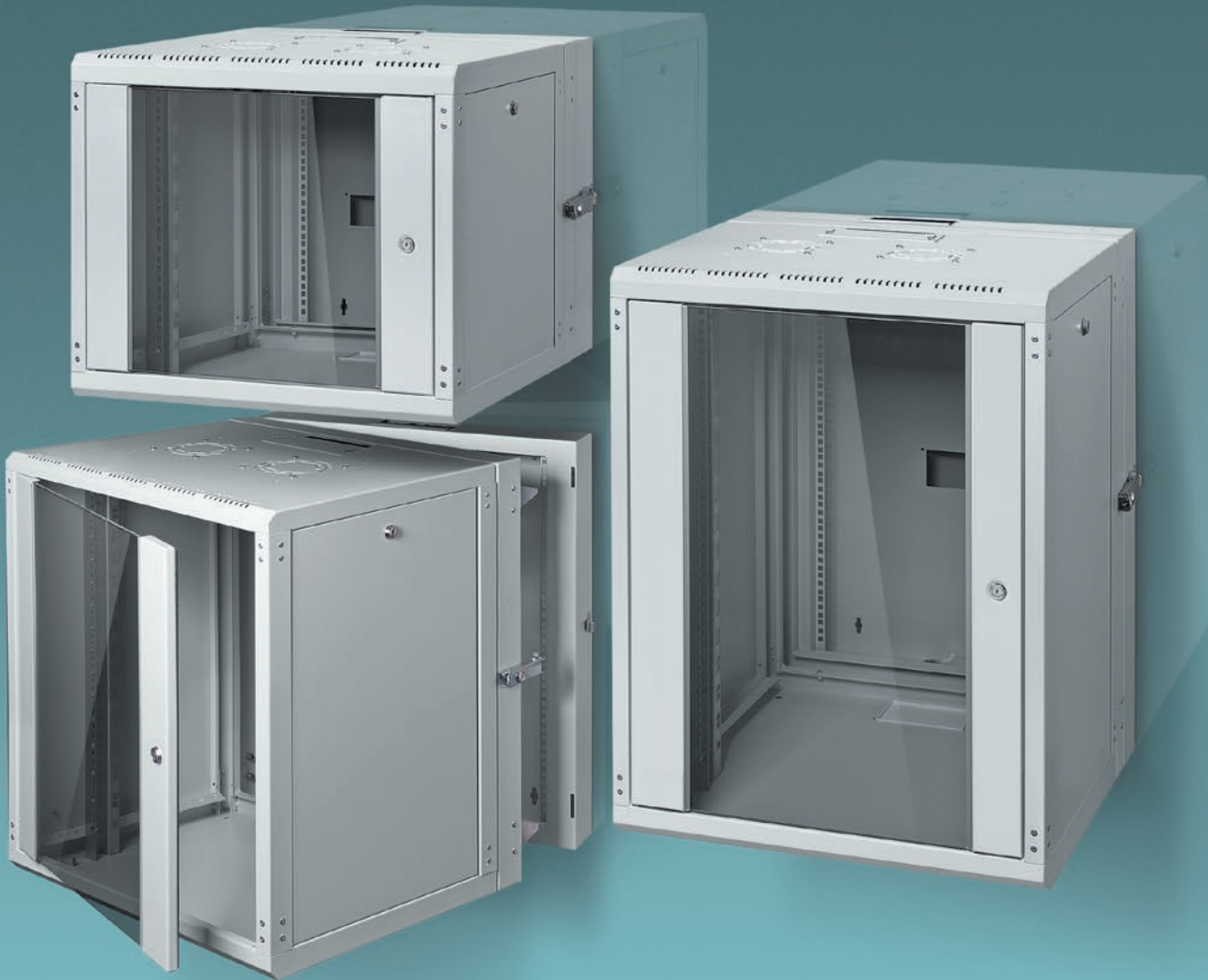


**Implementation-Panel**, (1 RU)..... **RDP-101**

Patch panel with 5 cable guides to run patch- and audio-cables neatly. Colour: light grey



**Patch-Panel**, (1 RU)..... **RRP-101**



**Note:** When comparing prices, please take into account, our cabinets of the WSH series are delivered completely assembled and packaged.

**Model designations**

- 19" Wall-Swing Frame Cabinet, 9 RU, with glass door, load capacity up to 100 kg..... WSH-009**
- 19" Wall-Swing Frame Cabinet, 12 RU, with glass door, load capacity up to 100 kg..... WSH-012**
- 19" Wall-Swing Frame Cabinet, 16 RU, with glass door, load capacity up to 100 kg..... WSH-016**



### Description

Our 19" rack flight cases are designed in accordance with the international 19" standard a meeting of highest requirements regarding the quality, stability, handling and design.

They are able to withstand the rigours of everyday use on stages and events as well as shipping through carriers or by airfreight.

Please consider the following features:

- The corpus is made out of "double-door" 7mm multilayer birch-multiplex-wood.
- Edge protection made out of robust aluminium angles that are fitted all around (25/25 mm).
- All 8 corners are additionally equipped with ball corners made from galvanized sheet steel.
- At the bottom of the "flight-case" there are 4 stable rubber feet.
- All flight-cases are supplied with flap handles in recessed grips and butterfly locks.
- 19" rack stripes serves professional usage on the front side as well as on the back side.

- Continuous mounting of the drawers with enclosed number of fastening screws, screw nuts (M5) as well as discs and rosettes.
- One removable cover on the front and in the back of the flight-case.

★

Models	RU	H	h	D	d	W	Weight
RFC-010	10	510	450	675	520	550	14 kg
RFC-012	12	595	545	675	520	550	16 kg
RFC-015	15	730	680	675	520	550	18 kg
RFC-020	20	945	905	675	520	550	21 kg

RU = 1 RU about 44,45 mm (1<sup>7</sup>/<sub>8</sub>)  
 H = Total height (with feet) in mm  
 h = Built-in height (for 19"-Devices) in mm  
 D = Total depth in mm  
 d = Built-in depth (for 19"-Devices) in mm  
 W = Total width in mm

Special sizes are available on request!

Accessories:

### Rack Support Rail Set

The ESS-408 rack support rail set includes 1 pair of aluminium angles. Support rails are recommended with heavy rack mount devices.

**Rack Support Rail Set** ..... **ESS-520**

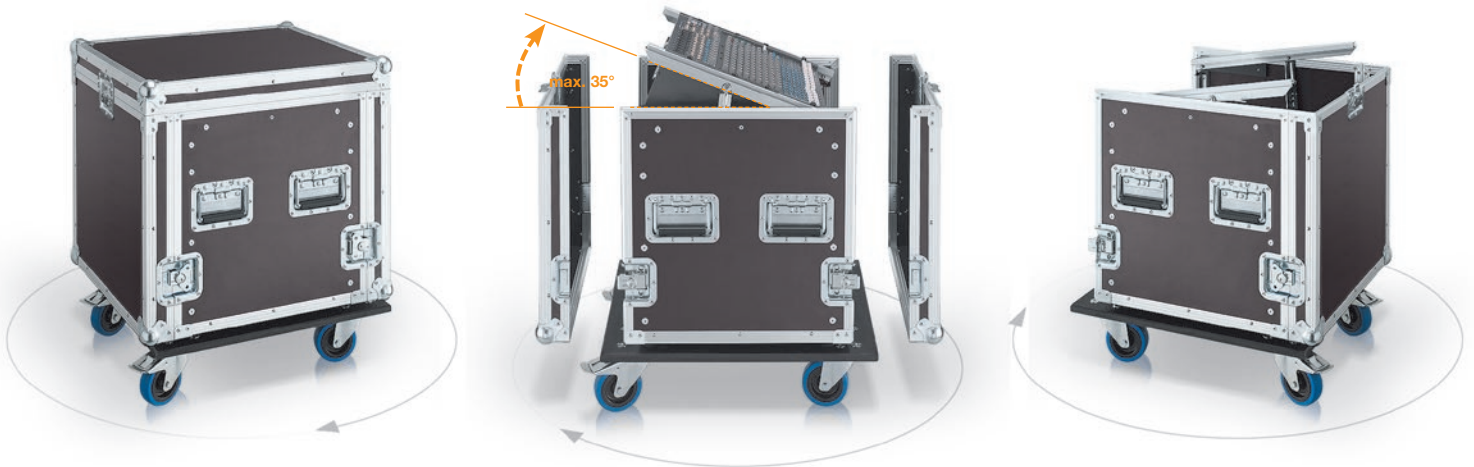
### Castor Case for RFC-Series

The RUS-100 castor base consists of an extremely stable base plate made of multilayer multiplex wood (15mm), which is finished in black. Four 100 mm blue high-quality castors are equipped with two stoppers. The dimensions of the RUS-100 are 535 (b) x 600 (d) mm, weight approx. 6 kg.

**Castor Case**, 4 pcs. 100 mm-„Blue-Wheels“ ..... **RUS-100**

### Model designations

- 19"-Rack „Flight-Case“, (10 RU) ..... **RFC-010**
- 19"-Rack „Flight-Case“, (12 RU) ..... **RFC-012**
- 19"-Rack „Flight-Case“, (15 RU) ..... **RFC-015**
- 19"-Rack „Flight-Case“, (20 RU) ..... **RFC-020**



### Description

Our 19" angle rack flight cases are designed in accordance with the international 19" standard a meeting of highest requirements regarding the quality, stability, handling and design.

They are able to withstand the rigours of everyday use on stages and events as well as shipping through carriers or by airfreight.

Please consider the following features:

- The corpus is made out of "double-door" 7mm multilayer birch-multiplex-wood.
- Edge protection made out of robust aluminium angles that are fitted all around (25/25 mm).
- All 8 corners are additionally equipped with ball corners made from galvanized sheet steel.
- At the bottom of the "flight-case" there are 4 stable rubber feet.
- All flight-cases are supplied with flap handles in recessed grips and butterfly locks.
- Arrangable rack rail on the top (10 RU/19").

Accessories:

### Castor Case for WFC-Series

The RUS-101 castor base consists of an extremely stable base plate made of multilayer multiplex wood (15mm), which is finished in black. Four 100 mm blue high-quality castors are equipped with two stoppers. Weight approx. 6 kg.

**Castor Case, 4 pcs. 100 mm-„Blue-Wheels“.....RUS-101**

- This case has a special built-in depth of 500 mm.
- One removable cover on the front and on the top of the flight-case.

★

Models	RU	H	h	D	d	W	Weight
<b>WFC-010U</b>	10	580	455	685	500	550	19,5 kg
<b>WFC-012U</b>	12	670	545	685	500	550	20,2 kg
<b>WFC-015U</b>	15	805	680	685	500	550	21,0 kg
<b>WFC-020U</b>	20	1003	905	685	500	550	23,0 kg

RU = 1 RU about 44,45 mm (1 7/8)      D = Total depth in mm  
H = Total height (with feet) in mm      d = Built-in depth (for 19"-Devices) in mm  
h = Built-in height (for 19"-Devices) in mm      W = Total width in mm

Special sizes are available on request!

### Model designations

**19"-Angle „U-Flight-Case“**, (10 RU) ..... **WFC-010U**  
**19"-Angle „U-Flight-Case“**, (12 RU) ..... **WFC-012U**  
**19"-Angle „U-Flight-Case“**, (15 RU) ..... **WFC-015U**  
**19"-Angle „U-Flight-Case“**, (20 RU) ..... **WFC-020U**



### Description

These 19" blank panels made of 1.3 mm steel serve to fill empty spaces in 19" rack cabinets.

The blank panels are flanged on top and bottom to increase strength. They may also be used for custom fabrication.

Please consider the following features:

- The 19" blank panels are finished in black powdered coat.
- The panels are available in 3 different heights

<b>19"-Blank Panel</b> , 1 RU (weight: 0,34 kg) .....	<b>RLP-001</b>
<b>19"-Blank Panel</b> , 2 RU (weight: 0,59 kg) .....	<b>RLP-002</b>
<b>19"-Blank Panel</b> , 3 RU (weight: 0,85 kg) .....	<b>RLP-003</b>



### Description

These 19" vent panels made of 1.3 mm steel serve to fill empty spaces in 19" rack cabinets.

They have 3 x 25 mm vent slots to provide optimum ventilation of the 19" rack cabinet.

Please consider the following features:

- The 19" vent panels are finished in black powdered coat.
- The panels are available in 3 different heights.

<b>19"-Vent Panel</b> , 1 RU (weight: 0,28 kg) .....	<b>RLF-001</b>
<b>19"-Vent Panel</b> , 2 RU (weight: 0,47 kg) .....	<b>RLF-002</b>
<b>19"-Vent Panel</b> , 3 RU (weight: 0,66 kg) .....	<b>RLF-003</b>



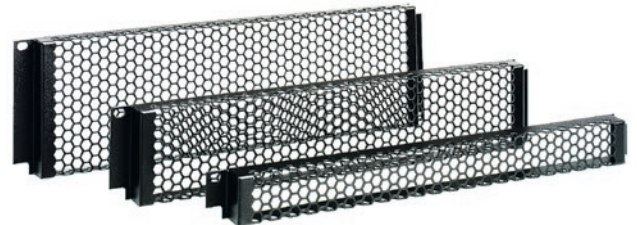
### Description

The 19" rack panels made of 1.3 mm steel serve to accommodate XLR sockets (universal „D“ type) and jack sockets.

Please consider the following features:

- The XLR rack panel can accommodate 8 XLR sockets.

<b>19"-XLR-Rack Panel</b> , 1 RU, 8 XLR (weight: 0,30 kg) .....	<b>RXP-081</b>
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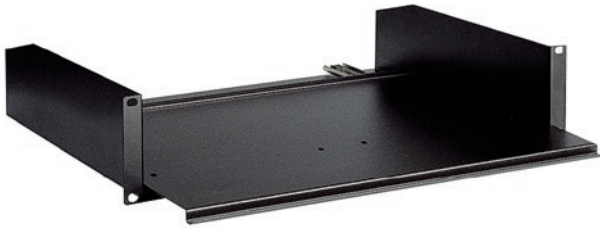
### Description

These 19" protective grids are made of 1.5 mm and serve to protect your devices against impact.

Please consider the following features:

- The 19" protective grids are finished in black powdered coat.
- They are fixed diagonally by means of the 19" rackmount screws.

<b>19"-Protective Grid</b> , 1 RU (weight: 0,43 kg) .....	<b>RSG-001</b>
<b>19"-Protective Grid</b> , 3 RU (weight: 0,46 kg) .....	<b>RSG-002</b>
<b>19"-Protective Grid</b> , 3 RU (weight: 0,54 kg) .....	<b>RSG-003</b>



### Description

This 19" sliding shelf is suitable for depositing or mounting devices and accessories. The base plate slides on rails and allows full extension. Additionally, holes are provided in the base plate for fastening components

Please consider the following features:

- The 19" sliding shelf is finished in black powdered coat. It is approx. 370 mm extendable and has a mounting depth of approx. 370 mm.
- The sliding shelves are made of 1.2 mm steel and are extremely stable.
- Top-adjusting height is 70 mm, the width 440 mm.

**19"-Sliding Shelf**, 3 RU (weight: 4,60 kg) ..... **RAU-002**



### Description

19" drawers which serve to accommodate components and accessories. The drawer slides are on rails and enable full extension. All drawers are equipped with a flush pull and a lock with 2 keys.

Please consider the following features:

- The mounting depth of the drawers is 360 mm.
- The drawers are made of 1.2 mm steel and are extremely stable.

**19"-Drawer**, 2 RU (weight: 6,20 kg) ..... **RSL-002**

**19"-Drawer**, 3 RU (weight: 7,30 kg) ..... **RSL-003**



### Description

These 19" clamping shelves serve to install components that require captivation. The clamps are adjustable in height and depth to provide a secure fit.

Please consider the following features:

- The mounting depth of these 19" clamping shelves is 250 mm.
- They are finished in black powdered coat.

**19"-Clamping Shelf**, 2 RU (weight: 2,20 kg) ..... **REF-002**

**19"-Clamping Shelf**, 3 RU (weight: 2,50 kg) ..... **REF-003**



### Description

The 19" universal shelves are extra deep and can be used for accommodating accessories, non-rackmount components and the like. Holes are provided in the shelf itself which can be used for fastening components.

Please consider the following features:

- The mounting depth of these universal shelves is 370 mm. They are made of 1.6 mm steel.
- They are finished in black powdered coat.

**19"-Universal Shelf**, 2 RU (weight: 2,77 kg) ..... **RAF-002**

**19"-Universal Shelf**, 3 RU (weight: 3,36 kg) ..... **RAF-003**



### Description

19" storage box which serves to accommodate components and accessories. It has a hinged cover that swings down. All storage boxes with hinged cover have flush pulls.

Please consider the following features:

- The 19" storage boxes are finished in black powdered coat.
- They are made of 1.2 mm steel and have a mounting depth of 250 mm.

- 19"-Storage Box, 2 RU (weight: 3,90 kg) ..... RKB-002**  
**19"-Storage Box, 3 RU (weight: 4,95 kg) ..... RKB-003**



The set includes 25 M6 oval head screws and the matching plastic cup washers.

- Additional Screw Set M6, M6 x 16 ..... RKS-006**



The set includes 25 M6 cage nuts for mounting the rack-mount devices on the front rackrails.

- Cage Nut Set M6 ..... RKM-006**



**Microphones, microphone stations  
and wireless UHF-systemes**



**11**

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Part 11



## Control unit conference system



### Description

The control unit GSC-100 is designed for a chairman as well as 60 delegate stations. Due to the possible extension to a total of four control units, up to 240 delegate call stations can be connected. The conference system can be easily and conveniently configured in various modes via the front panel.

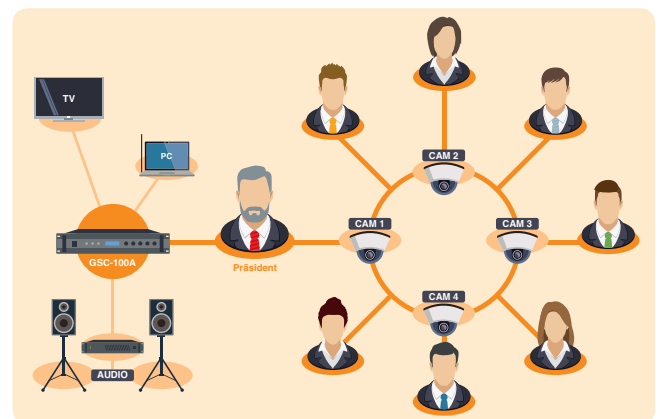
For the transmission of the discussion on a screen or beamer, a video output is available. The conference system comes with extensive configuration software that allows you to adapt the system optimally to local conditions.

Technical data	GSC-100A
Power Consumption	400 W
Distortion factor	< 0,05%
Frequency range	100 – 18.000 Hz
Sensitivity	-56 dB, ±2 dB
Inputs	AUX-IN (cinch), MIC IN (1/4 „jack), RJ-45 Data-Port, LINE / REC-OUT (cinch), XLR audio output, VIDEO IN / OUT (BNC), DOM (camera connection), RS-232 (PC connection), EFX (equalizer looping)
Power Supply	AC 230 V (50/60 Hz)
Dimensions (WxHxD)	480 x 88 x 360 mm; 2 RU
Weight	11,5 kg

An RS-232 interface is available for controlling the conference system via PC. In addition, up to four video cameras (tracking dome cameras) can be connected.

- Discussion system with up to 60 stations (expandable to up to 240 stations)
- Digital control of the microphone units and optional video cameras by the control center.
- Different modes: open, sequential and limited conference.
- Telephone support, meeting and voting function. Video camera tracking system (optional).

★



### Model designations

**Control unit conference system, digital . . . . . GSC-100A**  
19", (2 RU), for up to 60 stations

**MASTER** Chairman Station



**Description**

The elegant conference unit of the conference system includes a push-button for activating the microphone and a **priority button (red)** for deactivating all activated Delegate units. The red light ring of the gooseneck microphone indicates the speech readiness of the microphone unit for all panellists.

The integrated loudspeaker can be controlled via a side-mounted volume control. When the microphone unit is activated, it is automatically muted.

- **Priority key, to deactivate all activated delegate stations by the chairman**
- Built-in speaker transmits the conference well audible to the panellist.
- Detachable, flexible gooseneck condenser microphone with illuminated ring and windscreen.
- Stereo jack (3.5 mm) headphone and microphone connection.
- 3 m system connection cable with robust, screw-type DIN plug and expansion socket.

★

Technical data	GSP-102 A
Power Consumption	2 W
Distortion factor	< 0,05%
Frequency range	100 – 18.000 Hz
Polar Pattern	kidney
Nominal impedance	600 ohms
Power Supply	24V DC
Sensitivity	-44 dB, ±2 dB
Button functions	1x speaking, 1x priority (priority in front of delegates)
Connectors (Jack 3,5 mm)	Headphone Output; MIC input
Dimensions (WxHxD)	136 x 65 x 170 mm, gooseneck length 470 mm
Weight	900 g

**Model designations**

**Chairman Station**, (2 buttons) ..... **GSP-102 A**  
for connection to the GSC-100 A, for the Chairman with priority switch (Master)

**SLAVE** Delegated Station



**Description**

The elegant conference unit of the conference system includes a push-button for activating the microphone. The red light ring of the gooseneck microphone indicates the speech readiness of the microphone unit for all panellists.

The integrated loudspeaker can be controlled via a side-mounted volume control. When the microphone unit is activated, it is automatically muted.

- Built-in speaker transmits the conference well audible to the panellist.
- Detachable, flexible gooseneck condenser microphone with illuminated ring and windscreen.
- Stereo jack (3.5 mm) headphone and microphone connection.
- 3 m system connection cable with robust, screw-type DIN plug and expansion socket.

★

Technical data	GSD-101 A
Power Consumption	2 W
Distortion factor	< 0,05%
Frequency range	100 – 18.000 Hz
Polar Pattern	kidney
Nominal impedance	600 ohms
Power Supply	24V DC
Sensitivity	-44 dB, ±2 dB
Button functions	1x speaking
Connectors (Jack 3,5 mm)	Headphone output, REC output
Dimensions (WxHxD)	136 x 65 x 170 mm, gooseneck length 470 mm
Weight	900 g

**Model designations**

**Delegate Station**, (1 button) ..... **GSD-101 A**  
for connection to the GSC-100 A, for all other participants (slave)

## Dynamic Microphone with push-to-talk-button



## Dynamic Microphone with push-to-talk and chime button

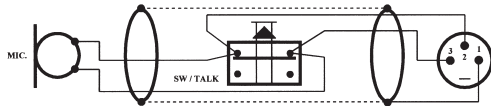


### Description

Dynamic gooseneck desktop microphone with a newly developed slim desktop housing which also provides additional space for retrofitting special facilities. Through its discreet and functional design, the microphone station fits well into any environment.

Please consider the following features:

- A noise compensated dynamic kidney microphone capsule is integrated in the gooseneck.
- All models are of balanced assembly, also the model with the 3-pin jack plug.
- The microphone station features high gain-before-feedback and a pop/wind screen. It has a 5 m connection cable fitted with the appropriate connector.



Circuit diagram shows model MS-201 X

Technical data	MS-201 K/X
Frequency response	100 – 15.000 Hz
Polar pattern	kidney
Nominal impedance	600 ohms
Sensitivity	-78 dB, ±3 dB
Button functions	Push-to-talk button
Dimensions (WxHxD)	131 x 42 x 181 mm, length of gooseneck: 390 mm
Weight	approx. 700 g

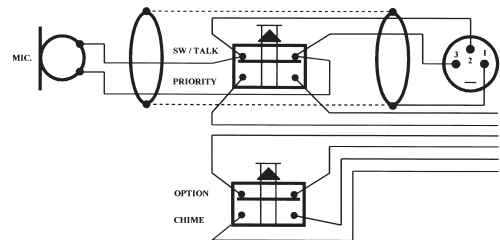
**Desktop Microphone, (jack, balanced) . . . . . MS-201 K**  
**Desktop Microphone, (XLR, balanced) . . . . . MS-201 X**

### Description

Dynamic gooseneck desktop microphone with a newly developed slim desktop housing. Same design as MS-201 microphone station, but with additional button for chime and contact, e.g. for priority control.

Please consider the following features:

- The desktop microphone has a push-to-talk button for release of the microphone and provides an option, e.g. for priority functions, switching matrix control.
- The second button serves to remote control the amplifier, e.g. chime signal, etc.
- The microphone station has a 5 m AF connection cable which is fitted with the appropriate connector and a 5 m control cable.



Circuit diagram shows model MS-202 X

Technical data	MS-202 K/X
Frequency response	100 – 15.000 Hz
Polar pattern	kidney
Nominal impedance	600 ohms
Sensitivity	-78 dB, ±3 dB
Button functions	1x push-to-talk with option, 1x chime with option
Dimensions (WxHxD)	131 x 42 x 181 mm, length of gooseneck: 390 mm
Weight	approx. 750 g

**Desktop Microphone, (jack, balanced) . . . . . MS-202 K**  
**Desktop Microphone, (XLR, balanced) . . . . . MS-202 X**

## Dynamic Microphone

with push-to-talk, chime and alarm button

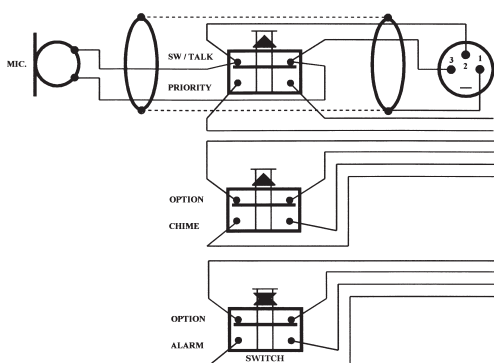


### Description

Dynamic gooseneck desktop microphone with a newly developed slim desktop housing. Same design as MS-201/MS-202 microphone station, but with additional button for alarm and contact e.g. for special control function, etc.

Please consider the following features:

- Apart from the features of the MS-201 and MS-202 desktop microphone stations, the MS-203 provides an additional alarm button with protective cap and an option for remote control, e.g. for a switching matrix, etc.



Circuit diagram shows model MS-203X

Technical data	MS-203 K/X
Frequency response	100 – 15.000 Hz
Polar pattern	kidney
Nominal impedance	600 ohms
Sensitivity	-78 dB, ±3 dB
Button functions	1x talk, 1x chime, 1x alarm, 3x contacts for options
Dimensions (WxHxD)	131 x 42 x 181 mm, length of gooseneck 390 mm
Weight	approx. 900 g

Desktop Microphone, (jack, balanced) ..... **MS-203 K**

Desktop Microphone, (XLR, balanced) ..... **MS-203 X**

## Electret Microphone

with push-to-talk, chime and alarm button

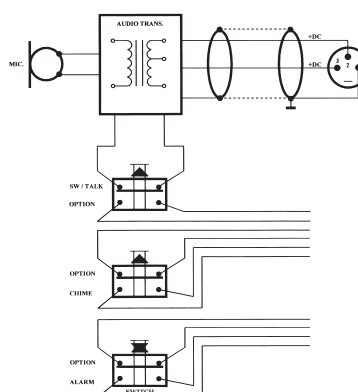


### Description

Electret gooseneck desktop microphone with a newly developed slim desktop housing. Same design as MS-201 PX/MS-202 PX microphone station, but with additional button for alarm and contact e.g. for special control function, etc.

Please consider the following features:

- Apart from the features of the MS-201 PX and MS-202 PX desktop microphone stations, the MS-203 PX provides an additional alarm button with protective cap and an option for remote control, e.g. for a switching matrix, etc.



Circuit diagram shows model MS-203PX

Technical data	MS-203 PX
Frequency response	100 – 15.000 Hz
Polar pattern	kidney
Nominal impedance	1,2 kohms
Phantom power	24 V DC
Sensitivity	-78 dB, ±3 dB
Button functions	1x talk, 1x chime, 1x alarm, 3x contacts for options
Dimensions (WxHxD)	131 x 42 x 181 mm, length of gooseneck 290 mm
Weight	approx. 1000 g

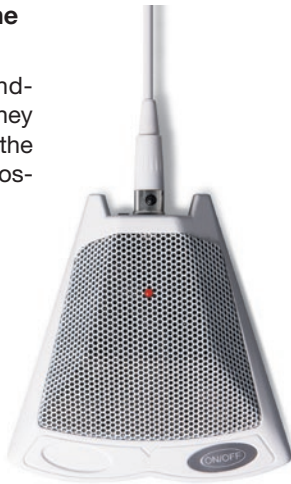
Desktop Microphone, (24 V DC phantom power) ..... **MS-203 PX**

## Electret Boundary Microphone

(with Phantom Power 11–52 V DC)

Professional, attractive boundary electret microphone with kidney characteristic. PTT function by the front side ON / OFF switch is possible.

Power supply results from Phantom Power supply (11–52 V DC).



Technical data	GFM-300
Frequency	30 – 20.000 Hz
Polar pattern	Kidney
Nominal Impedance	100 ohms
Sensitivity	-65dB ±3dB at 1.000 Hz on 1Pa
Max Input-Level	130dB SPL, 1 kHz at 1% T.H.D.
Power supply	Phantom power (11–52 V DC), 2mA typical
Dimensions and Weight	(W) 102 x (H) 104 x (D) 22 mm; approx. 297g (without cable)
Accessories included	Cable-Ø 3 mm – approx. 5 m (XLR), white
Colour	white

**Electret Boundary Microphone ..... GFM-300**

## Electret Gooseneck Microphone

(with Phantom Power 9–52 V DC)

Professional gooseneck electret condenser microphone with kidney characteristic. With phantom power supplied by the electret capsule creates outstanding sound quality and a relatively great talk distance.

The ideal length of 424 mm permits the use for many applications. The flexible gooseneck allows precise alignment and is equipped with an XLR connector.



Technical data	EXM-420
Frequency	50 – 18.000 Hz
Polar pattern	Kidney
Nominal Impedance	200 ohms
Sensitivity	-65dB ±3dB at 1.000 Hz on 1Pa
Max Input-Level	145dB SPL, 1 kHz at 1% T.H.D.
Power supply	Phantom power (9 – 52 V DC), 2mA typical
Dimensions and Weight	Ø 19 mm x 424 mm (L); approx. 123g
Accessories included	wind screen, XLR plug
Colour	black

**Electret Gooseneck Microphone ..... EXM-420**

## Gooseneck Microphone

(Unbalanced, electret, cables not terminated)

**Electret** kidney gooseneck microphone. It features high gain-before-feedback and an integrated wind and pop screen.

A mounting thread with matching nut is provided at the bottom end of the gooseneck. This enables mounting of the microphone on amplifiers, control panels, etc. The connection cable is balanced and not terminated (1 wire + shield).



Technical data	EGM-300
Frequency response	100 – 15.000 Hz
Polar pattern	kidney
Nominal impedance	1,2 kohms
Sensitivity	-78 dB, ±3 dB
Power supply	Phantom power (9 - 24 V), external: unbalanced, cable not terminated
Dimensions and weight	Ø 16 mm x 290 mm (L), approx. 80 g
Accessories included	M8 nut, tooth lock washer, plain washer, wind screen
Colour	black

**Electret Gooseneck Microphone ..... EGM-300**

## Gooseneck Microphone

(Balanced, dynamic, cables not terminated)

Dynamic kidney gooseneck microphone. It features high gain-before-feedback and an integrated wind and pop screen.

A mounting thread with matching nut is provided at the bottom end of the gooseneck. This enables mounting of the microphone on amplifiers, control panels, etc. The connection cable is balanced and not terminated (3 wires).



Technical data	DGM-400
Frequency response	100 – 15.000 Hz
Polar pattern	kidney
Nominal impedance	600 ohms
Sensitivity	-78 dB, ±3 dB
Dimensions and weight	Ø 32 mm x 390 mm (L), approx. 110 g
Accessories included	M8 nut, tooth lock washer, plain washer
Colour	black

**Dynamic Gooseneck Microphone ..... DGM-400**

## Dynamic Microphone (Kidney)

Great quality dynamic Handmicrophone with kidney characteristics. It does not have back coupling problems and wind- and pop-protection are integrated.

A low-noise On- and Off-switch is integrated on the handle.



Technical data	DM-202 K/X
Frequency response	120 – 18.000 Hz
Polar pattern	Kidney
Nominal Impedance	600 ohms
Sensitivity	-53 dB, ±3 dB
Dimensions and Weight	Ø 49 mm x 180 mm (L); ca. 300 g
Button	ON / OFF with locking screw
Access./Scope of supply	1 connection cable 4 m

- Dynamic Microphone, with jack plug, unbalanced ..... **DM-202 K**
- Dynamic Microphone, with XLR plug, balanced. .... **DM-202 X**

## Electret Microphone (phantom power supply 48V DC)

Electret Handmicrophone (back-electret) with kidney characteristics, which is perfectly suitable for stage performances as well as 100V PA-technology.

The power supply results from phantom supply (+11 to +52V DC) A low-noise On- and Off-switch is integrated on the handle.



Technical data	EM-300X
Frequency response	20 – 20.000 Hz
Polar pattern	Kidney
Nominal Impedance	200 ohms at 1kHz
Sensitivity	-67 dB, ±3 dB at 1kHz
Dimensions and Weight	Ø 49 mm x 184 mm (L); approx. 318 g
Button	ON / OFF with locking screw
Access./Scope of supply	1 connection cable 5 m, 1 microphone holder (3/8" and 5/16")

- Electret-Microphone, with XLR plug, balanced ..... **EM-300 X**

## Electret Cudgel Microphone (with phantom power supply 9-52V DC)



### Description

The ECM-400 is a tube-directivity microphone in the shape of a cudgel (shotgun) with excellent directivity characteristic.

This microphone has a brilliant consonant-comprehensibility offering ideal premises for universal usage. Even sound sources which are further away can be amplified with no problem. A wind deflector and a microphone holder are included in scope of delivery.

Technical data	ECM-400
Frequency	30 – 20.000 Hz
Polar pattern	Cudgel (Shotgun)
Nominal Impedance	150 ohms
Max. Input Level	130 dB SPL, 1 kHz at 1 % THD
Dynamic	110 dB, 1 kHz at Max. SPL; S/N Ratio 74 dB, 1 kHz
Power supply	phantom power 9-52V DC, 2 mA typical
Dimensions and Weight	Ø 21 mm x 32,5 mm, approx. 200 g
Switch	Bass-Roll-off-switch or flat
Access./Scope of delivery	1 wind deflector, 1 microphone holder

- Electret Cudgel Microphone ..... **ECM-400**  
(with phantom power supply)



Gooseneck (13", black), approx. 33 cm long, with male XLR and female XLR.

**Gooseneck** ..... **SH-301 X**

Rugged gooseneck, approx. 30 cm long, with adapter for 3/8" and 5/8" threaded connection.

**Gooseneck** ..... **SH-300**

Rugged gooseneck, approx. 15 cm long, with adapter for 3/8" and 5/8" threaded connection.

**Gooseneck** ..... **SH-150**

### Gooseneck flange



Chrome-plated flange plate (Ø approx. 45 mm) for mounting microphone goosenecks.

Flange plate has 3/8" and 5/8" threaded adapter.

**Gooseneck flange** ..... **SF-100**

### Microphone boom (matt black metal tube)

The microphone boom is made of sturdy, matt black metal tube with black plastic parts.

The length of the swivel boom is 85 cm and has a 3/8" threaded connection. The weight of the swivel arm is only 0.9 kg.



This swivel boom is suitable for combination with the floor stand BS-190 or with other matching microphone stands.

**Microphone boom (matt black metal tube)** ..... **SA-090**

### Microphone floor stand with boom arm



Stable, damped floor stand (up to 180 cm extendable) with 3/8" thread.

The swivel boom has a length of 85 cm and a 3/8" threaded connection.

The nickel-plated tubes have a handy folding mechanism.

**Floor stand** ..... **BS-185**  
with boom arm (nickel-plated metal tubes)

### Microphone floor stand With quick adjustment mechanism



Stable, lightweight and impact-sound-absorbing aluminum tripod (black), with a new handle mechanism, for very simple, noiseless height adjustment. The stand can be extended up to 170 cm, with 3/8" thread.

**Floor stand** ..... **BS-190**  
**Floor stand** ..... **BS-195**  
with boom arm

### Microphone floor stand



Sturdy floor stand with 3/8" thread and nickel-plated tubes. The stand can be extended up to 180 cm.

A heavy cast base provides stability and less danger of stumbling.

**Floor stand** ..... **BS-170**  
(nickel-plated metal tubes)

## Microphone Clip (universal)



This microphone clip fits all common microphone types with a diameter of 23-30 mm, also microphones with cone shaped handles.

The holder comes with a 3/8" and 5/8" threaded connection.

**Microphone clip, for Ø 23-30 mm ..... MH-310**

## Microphone Clip (universal)



This microphone clip fits all common microphone types with a diameter of 30-36 mm, also microphones with cone shaped handles.

The holder comes with a 3/8" and 5/8" threaded connection.

**Microphone clip, for Ø 30-36 mm ..... MH-800**

## Desktop microphone stand



Sturdy desktop stand which extends up to 40 cm, with heavy cast-iron base and 3/8" and 5/8" threaded connections.

**Desktop stand ..... TS-040**

## Desktop microphone stand



Practical, desktop stand with plates of cast-iron with 3/8" and 5/8" threads.

**Desktop stand ..... TS-020**

## Desktop microphone stand with boom arm



Sturdy desktop stand with boom arm that extends up to 40 cm. Threaded connections: 3/8" and 5/8".

**Desktop stand ..... TS-060**

## Microphone/Speaker Socket flush mounting



Connection box with white plastic cover for flush mounting in 55 mm switch boxes.

Can be combined with the surface program GIRA System 55.

Dimensions: 81x81x15 mm.  
Color: RAL 9010, matt

**Speaker Socket ..... DL-055 US**  
with Speaker socket

**Microphone Socket ..... DM-055 UX**  
with XLR socket

## Microphone/Speaker Socket surface mounting, incl. surface mounting box



Connection box with white plastic cover for surface mounting. Including plastic surface frame.

Can be combined with the surface program GIRA System 55.

Dimensions: 81x81x45 mm.  
Color: RAL 9010, matt

**Speaker Socket ..... DL-055 AS**  
with Speaker socket

**Microphone Socket ..... DM-055 AX**  
with XLR socket

## Microphone Socket Floor connection socket



Aluminium die cast socket with cover for floor and wall mounting.

Dimensions: 85 x 85 x 65 mm.  
Colour: olive.

**Microphone Socket ..... MD-100 FD**  
with DIN socket

**Microphone Socket ..... MD-100 FX**  
with XLR socket

### XLR-Inline jack, silver

**FEMALE**

- 3-pin XLR-Coupler
- Self adjusting clamps as strain relief
- Cable-bend protection through vulcanised rubber ending
- Robust, nickel-plated metal-diecast case
- Colour: silver, black



XLR-Inline jack, silver ..... **XLR-203 F**

### XLR-Jack, silver

**MALE**

- 3-pin XLR-Jack
- Self adjusting clamps as strain relief
- Cable-bend protection through vulcanised rubber ending
- Robust, nickel-plated metal-diecast case
- Colour: silver, black



XLR-Jack, silver ..... **XLR-203 M**

### XLR-Inline jack, black

**FEMALE**

- 3-pin XLR-Coupler (female)
- Self adjusting clamps as strain relief
- Cable-bend protection through vulcanised rubber ending
- Robust, burned-in varnish metal-diecast case
- Colour: black



XLR-Inline jack, black ..... **XLR-303 F**

### XLR-Jack, black

**MALE**

- 3-pin XLR-Jack (male)
- Self adjusting clamps as strain relief
- Cable-bend protection through vulcanised rubber ending
- Robust, burned-in varnish metal-diecast case
- Colour: black



XLR-Jack, black ..... **XLR-303 M**

### XLR-Angle-Inline jack, silver

**FEMALE**

- 3-pin XLR-Angle-Coupler with strain relief
- Cable-bend protection through vulcanised rubber ending
- Colour: silver; depth until top edge of angle: 25 mm;



XLR-Angle-Inline jack, silver ..... **XLR-103 WF**

### XLR-Angle-Jack, silver

**MALE**

- 3-pin XLR-Angle-Jack with strain relief
- Cable-bend protection through vulcanised rubber ending
- Colour: silver; depth until top edge of angle: 25 mm;



XLR-Angle-Jack, silver ..... **XLR-103 WM**

### Adapter XLR-Inline jack on 6,3 mm (mono) Jack Plug

**FEMALE**

- 3-pin XLR-Inline jack on 6.3 mm (mono) jack plug
- Robust, nickel-plated metal-diecast case



XLR/Jack-Adapter ..... **AXJ-100 F**

### Adapter XLR-Inline jack on 6,3 mm (mono) Jack Plug

**MALE**

- 3-pin XLR-Inline jack on 6.3 mm (mono) jack plug
- Robust, nickel-plated metal-diecast case



XLR/Jack-Adapter ..... **AXJ-100 M**

# JACK PLUG/CINCH-CONNECTORS

## Jack Socket 6,3 mm (mono), silver

**FEMALE**

- 2-pin 6.3 mm mono jack socket
- Self adjusting clamps as strain relief
- Cable-bend protection through vulcanised rubber ending
- Robust, nickel-plated metal-diecast case
- Colour: silver, black



Jack Socket (mono), silver ..... **JC-102 FM**

## Jack Plug 6,3 mm (mono), silver

**MALE**

- 2-pin 6.3 mm mono jack-plug
- Self adjusting clamps as strain relief
- Cable-bend protection through vulcanised rubber ending
- Robust, nickel-plated metal-diecast case
- Colour: silver, black



Jack Plug (mono), silver ..... **JC-102 MM**

## Jack Scket 6,3 mm (stereo), silver

**FEMALE**

- 3-pin 6.3 mm stereo jack socket
- Self adjusting clamps as strain relief
- Cable-bend protection through vulcanised rubber ending
- Robust, nickel-plated metal-diecast case
- Colour: silver, black



Jack Socket (stereo), silver ..... **JC-103 FS**

## Jack Plug 6,3 mm (stereo), silver

**MALE**

- 3-pin 6.3 mm stereo jack-plug
- Self adjusting clamps as strain relief
- Cable-bend protection through vulcanised rubber ending
- Robust, nickel-plated metal-diecast case
- Colour: silver, black



Jack Plug (stereo), silver ..... **JC-103 MS**

## Cinch Socket Set

**FEMALE**

- 2-pin cinch socket with gold-plated contacts
- Self adjusting clamps as strain relief
- Cable-bend protection through vulcanised rubber ending
- Robust, metal-diecast case
- For cable diameter of: 5 – 6 mm
- Colour: gold/black with red and white flanges



Cinch Socket Set, black ..... **CC-603 F**

## Cinch Plug Set

**MALE**

- 2-pin cinch-plug with gold-plated contacts
- Self adjusting clamps as strain relief
- Cable-bend protection through vulcanised rubber ending
- Robust, metal-diecast case
- For cable diameter of: 5 – 6 mm
- Colour: gold/black with red and white flanges



Cinch Plug Set, black ..... **CC-603 M**

## XLR-Installation Jack

**FEMALE**

- 3-pin XLR-installation-jack
- Latching device
- Robust metal-diecast case
- Colour: black
- Typ: D



XLR-Installation Jack, black..... **XLR-503 F**

## XLR-Installation Jack

**MALE**

- 3-pin XLR-installation-jack
- Latching device
- Robust metal-diecast case
- Colour: black
- Typ: D



XLR-Installation Jack, black..... **XLR-503 M**

## XLR-Installation Jack

**FEMALE**

- 3-pin XLR-installation-jack
- Latching device
- Robust metal-diecast case
- Colour: black
- Typ: P



XLR-Installation Jack, black..... **XLR-403 F**

## XLR-Soldering/Installation Jack

**FEMALE**

- 3-pin XLR-installation-jack
- Robust metal-diecast case
- Colour: black
- Typ: D



with soldering contacts

XLR-Soldering/Installation Jack, black.... **XLR-503 FL**

## Speaker-Installation Jack (4-pin)

**FEMALE**

- 4-pin Speaker-installation-jack
- Robust plastic cabinet
- Colour: black
- Typ: D



Speaker-Installation Jack, (4-pin)..... **SPC-104 F**

## Speaker-Installation Jack (8-pin)

**FEMALE**

- 8-pin Speaker-installation-jack
- Robust plastic cabinet with metal ring
- Mounting hole diameter 42 mm
- Outside dimension 50 mm
- Colour: black / silver



Speaker-Installation Jack, (8-pin)..... **SPC-108 F**

## Speaker-Inline jack

**FEMALE**

- 4-pin Speaker-Coupler
- Strain Relief with cable-bend protection
- For cable diameter from 5 mm up to 15 mm
- Ampacity max. 30 A
- Wire-cross-section max. 4 mm<sup>2</sup>
- Colour: black, blue



Speaker-Coupler, black.....**SPC-204 F**

## Speaker-Coupler

**MALE**

- 4-pin Speaker-coupler
- Strain Relief
- For cable diameter from 5 mm up to 15 mm
- Ampacity max. 30 A
- Wire-cross-section max. 4 mm<sup>2</sup>
- Colour: black, blue



Speaker-Coupler, black.....**SPC-204 M**

## Speaker-Connector (8-pin)

- 8-pin Speaker-Connector
- Robust aluminium housing
- Ampacity max. 30 A
- Colour: black



Speaker-Connector (8-pin).....**ASS-108**

## Speaker-Coupler (8-pin)

**MALE**

- 8-pin Speaker-coupler
- Strain Relief
- For cable diameter from 10 mm up to 20 mm
- Ampacity max. 30 A
- Wire-cross-section max. 4 mm<sup>2</sup>
- Colour: black, blue



Speaker-Coupler (8-pin).....**SPC-208 M**

## Speaker Connector

4-pin Speaker connector, which is used for the connection of two cables with cable-jacks, e.g. to extend the lengths of cables to get to the speaker. The housing of the connector is made of robust aluminium.



Speaker Connector.....**ASS-104**

## XLR Cable

**MALE**

- 2-pin Speaker-speaker-cable
- 10 m long
- Speaker / Speaker-jack with locking device
- Strain Relief with cable-bend protection
- Wire-cross-section 2x 2,5 mm<sup>2</sup>
- Colour: black, blue



Speaker Cable, 10 m ..... **ACC-107**

## Speaker Cable, desired length

**MALE**

- Sold by meter, up to 40 m
- 2-pin Speaker-loudspeaker-cable
- Length depending on allegation (e.g. ACC-108/1 for 1m)
- Speaker / Speaker-jack with locking device
- Strain Relief with cable-bend protection
- Wire-cross-section 2x 2,5 mm<sup>2</sup>
- Colour: black, blue



Your desired cable length  
(up to 40 m max.)

Speaker Cable, [desired length] ..... **ACC-108/xx**

## Cable 2x Cinch (M) (L/R) on 2x Cinch (M) (L/R)

**MALE**

- Cable cinch plug L/R on cinch plug L/R
- Fused with cable-bend protection



Cable 2x Cinch (M) on 2x Cinch (M), 1 m ..... **ACC-057**

## Cable 2x Cinch (F) (L/R) on 2x Cinch (M) (L/R)

**MALE**

**FEMALE**

- Cable cinch socket L/R on cinch plug L/R
- Fused with cable-bend protection



Cable 2x Cinch (F) on 2x Cinch (M), 3 m ..... **ACC-058**

## Cable Jack Plug 6,3 mm (Mono) on Jack Plug 6,3 mm (Mono)

**MALE**

- Cable with 2x Jack Plug 6,3 mm mono
- Fused with cable-bend protection



Cable 2x Jack Plug 6,3 mm, 5 m ..... **ACC-059**

## Cable Jack Plug 3,5 mm (Stereo) on Jack Plug 3,5 mm (Stereo)

**MALE**

- Cable with 2x Jack Plug 3,5 mm stereo
- Fused with cable-bend protection



Cable 2x Jack Plug 3,5 mm, 2 m ..... **ACC-060**

## XLR Cable

- Bal. XLR-Cable (connector / inline jack)
- Strain Relief with cable-bend protection
- Cable diameter: 6 mm
- Cable color: black

**MALE**  
**FEMALE**



XLR-Cable, 5 m ..... **ACC-050**  
XLR-Cable, 10 m ..... **ACC-100**

## XLR/Jack Plug 6,3 mm (mono) cable

- Bal. Cable XLR (F) / jack-plug 6.3 mm (M)
- Strain Relief with cable-bend protection
- Cable diameter: 6 mm
- Cable color: black

**MALE**  
**FEMALE**



XLR/Jack Plug 6,3 mm (mono) cable, 5 m ..... **ACC-051**  
XLR/Jack Plug 6,3 mm (mono) cable, 10 m ..... **ACC-101**

## Jack Plug 6,3 mm (stereo) on 2x Jack Plug (mono)

**MALE**

- Cable with jack plug 6.3 mm (stereo) on 2 x jack plug (mono)
- Strain Relief with cable-bend protection
- Cable diameter: 6 mm



Jack Plug 6,3 mm (stereo) on 2x Jack Plug (mono), 5 m ..... **ACC-056**

### Most common application:

It is most commonly used as an "insert-cable" also called Y-cable. An insert-point e.g. at the mixer contains as a stereo-jack-plug three contacts: ground, input and output.

In order to loop in an external device via the insert-point a stereo-jack-plug is necessary, which is splitted onto two mono cables. The latter will be connected with the in- and outputs of the external device.

The signal leaves the input-channel through that one pin of the insert-jack to get to the effect-device. Then this signal gets back through the other pin of the insert-jack. You then connect both of the jack-plug-cables to the effect-input and output on the other side.

★

## Cable Jack Plug 3,5 mm (stereo) on 2 x Cinch (L/R)

**MALE**

- Cable 3.5 mm stereo jack plug on cinch L/R
- Fused with cable-bend protection

**Most common application:** sound-card-output of a computer on compact-amplifier-inputs.

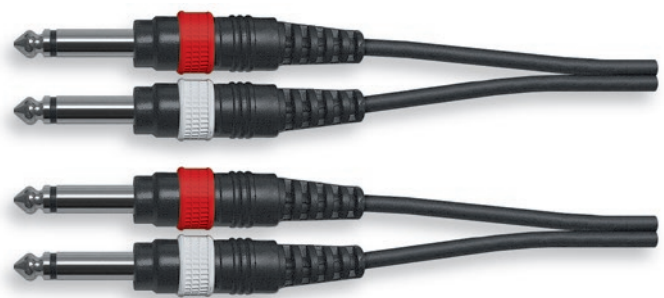


Cable Jack Plug 3,5 mm on 2 x Cinch, 5 m ..... **ACC-054**

## Cable 2 x Jack Plug 6,3 mm (mono) / 2 x Jack Plug 6,3 mm (mono)

**MALE**

- Cable 6.3 mm mono L/R on 6.3 mm mono jack-plug L/R
- Strain Relief with cable-bend protection
- Fused with cable-bend protection



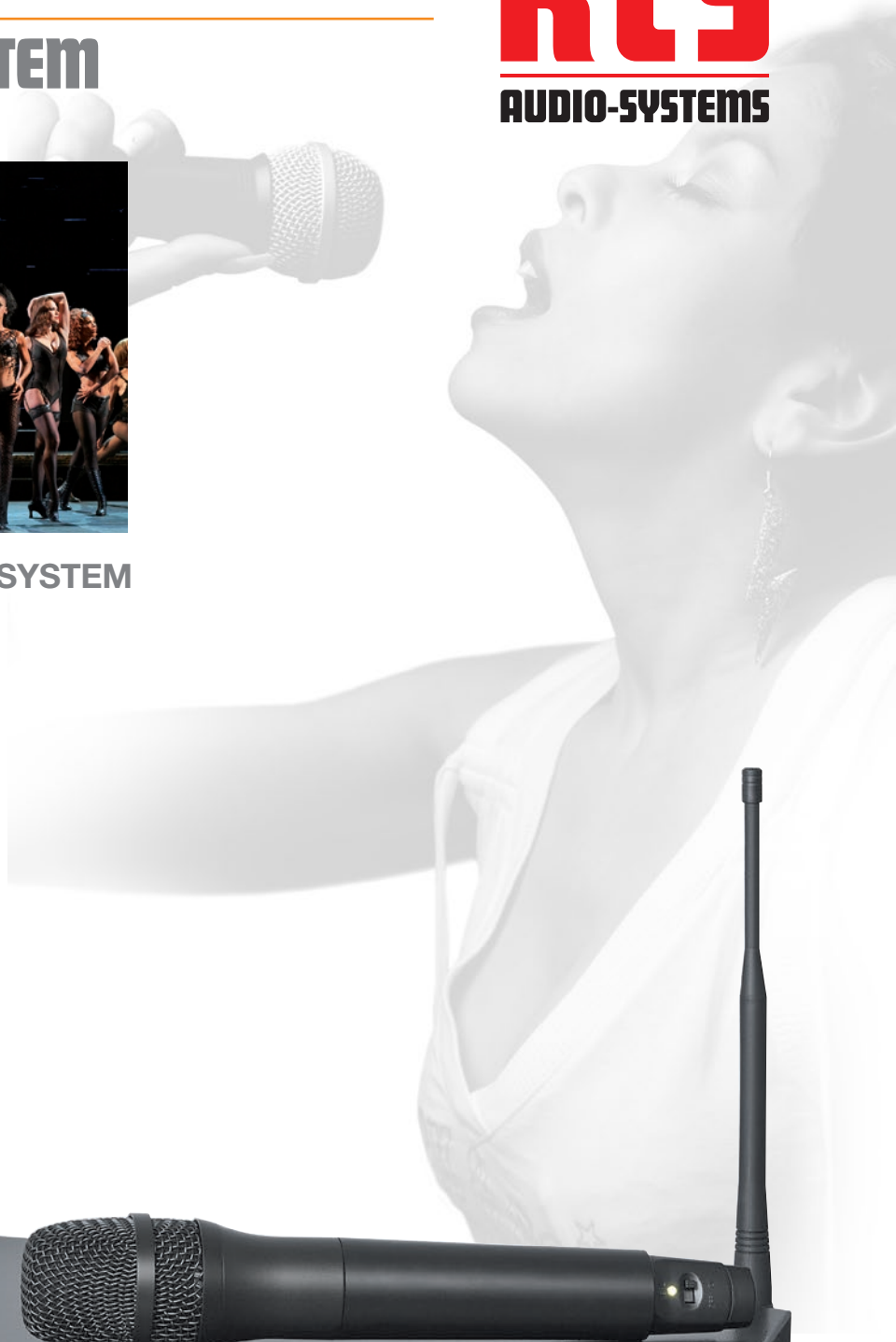
2x Jack Plug on 2x Jack Plug 6,3 mm, 5 m ..... **ACC-055**



# 4x 16-FREQUENCIES

## MODULAR UHF-SYSTEM

**RCS**<sup>®</sup>  
AUDIO-SYSTEMS



### UHF WIRELESS-MICROPHONE SYSTEM



Mobile- or fixed installation for:

- Exhibitions and Fairs
- Seminars and Schools
- Stage Church and Sporting Events

FREQ  
4x16





Picture: Full extension of the UR-016 (+ 4 modules URM-016)



- True diversity technology
- Available in 2 frequencies
- New: 620-640 MHz

The module carrier UR-016B / C can be equipped as required with up to 4 receiver modules URM-016B / C. The 4-channel UHF system is offered in 2 frequency ranges. This results in the use of multiple systems, the ability to operate up to 8 microphones at the same time. The True Diversity technology also achieves the best results in problematic broadcasting environments.

- Very small space requirement with only one height unit
- Four balanced XLR outputs and one additional mix-out
- Internal active antenna splitter
- Removable antennas for mounting in 19" cabinets

★

### Information about the frequencies:

The frequency range 863-865 MHz is harmonized Europe-wide and can be operated without registration. Please indicate the use of the 620-640 MHz frequency range at your local Network Agency.

### Basis version: UR-016 without modules (URM-016)



**4-tray Module carrier, (863-865 MHz) ..... UR-016B**  
for up to 4 pcs. URM-016B, incl. power supply, 19" angle and antennas

**4-tray Module carrier, (620-640 MHz) ..... UR-016C**  
for up to 4 pcs. URM-016C, incl. power supply, 19" angle and antennas

Technical data	UR-016B	UR-016C
Frequency Range	863 – 865 MHz (16 frequencies)	620 – 640 MHz (16 frequencies)
Functional principle	True Diversity	
Operating principles	> 100 dB	
Signal-to-noise ratio	50 Hz – 15 KHz	
Frequency response	< 0,5 % (at 1KHz)	
Distortion factor	„NoiseLock“ Squelch	
Squelch	MIC = XLR sym.; -10dB	
Audio-Output	LINE = jack plug (6,3 mm) unbal.; -10dB	
Antenna	TNC-Connector, removable	
Power supply	12 V DC via power supply	
Scope of supply	Module carrier (4-tray), power supply unit, antenna, 19"-Angle	
Dimensions / Weight	W 420 mm x T 180 mm x D 44,3 mm (H); approx. 3 kg	

### UHF-Receiver Module



UHF receiver module in true diversity technology for installation in the UR-016B / C. The display is used to display the selected channel. Per UR-016 base unit, a maximum of four receiver modules can be installed.

**UHF-Receiver Module, (863-865 MHz) ..... URM-016B**  
Extension module with 16 frequencies for UR-016B

**UHF-Receiver Module, (620-640 MHz) ..... URM-016C**  
Extension module with 16 frequencies for UR-016C

## UHF-Wireless Hand Microphone



CE 0336  
CE 0336D

### Description

This UHF-Hand Microphone is equipped with a premium condenser microphone capsule. It is a very handy microphone. The 16 frequencies can easily be adjusted via a comfortable Dip-switch. The power supply results from 2 Mignon-Batteries.

Technical data	UH-016B	UH-016C
Carrier frequency	863 – 865 MHz (16 frequencies)	620 – 640 MHz (16 frequencies)
Modulation	FM	
Transmission	PLL synth.	
RF Output Power	10 mW	
Frequency response	50 Hz – 18 kHz	
Microphone type	Condensator	
Power supply	2 papprox. Mignon (1,5V; AA) or accu (1,2 V, AA)	
Transmission range	approx. 50 – 80 m	
Dimensions / Weight	Ø 30 mm x L 290 mm; 230 g	

**UHF-Hand Microphone, (863-865 MHz) ..... UH-016B**

**UHF-Hand Microphone, (620-640 MHz) ..... UH-016C**

## Neckworn Microphone

3-pin MINI XLR



Very comfortable condenser-neckworn-microphone conducted in the characteristic of a kidney. Due to the low dead-weight and the flexible material this microphone fits all head shapes perfectly. Available in the colours “skin-colour” and “black”.

**Neckworn Microphone, skin-color ..... HS-200 S**

**Neckworn Microphone, black ..... HS-200 B**

## UHF-Bodypack-Transmitter



CE 0336  
CE 0336D

3-pin MINI XLR

for LA-200 B  
or HS-200 S/B

### Description

Body pack-Transmitter with 16 eligible frequencies. The input sensitivity is changeable in order to be able to induct Mic- and Line signals. The power supply results from 2 Mignon-Batteries.

Technical data	UB-016B	UB-016C
Carrier frequency	863 – 865 MHz (16 frequencies)	620 – 640 MHz (16 frequencies)
Modulation	FM	
Transmission	PLL synth.	
RF Output Power	10 mW	
Frequency response	50 Hz – 18 kHz	
Microphone type	mini-XLR 3-pol.	
Power supply	2 papprox. Mignon (1,5V; AA) or accu (1,2 V, AA)	
Transmission range	approx. 50 – 80 m	
Dimensions / Weight	W 70 mm x H 100 mm x D 18 mm; 100 g	

**UHF-Transmitter, (863-865 MHz) ..... UB-016 B**

**UHF-Transmitter, (620-640 MHz) ..... UB-016 C**

## Lavalier Microphone

3-pin MINI XLR



Condenser microphone completed in ball-characteristic. Delivery includes an 80 cm long connecting cable and a clip. The microphone is very discreet and you can fix it on your clothes wherever you want. It is available in the colour black.

**Lavalier Microphone, black ..... LA-200 B**

**Accessories****19"-Rackmount Set**

for 1 pcs. UR-016



19" brackets for antenna mounting on one receiver unit (1 RU).

**Mounting-Set . RU-502T**

1 RU, for 1 pcs. UR-016

**Microphone-Holder**

for microphone UH-016

**Mic.-Holder . . . . . MH-800**

for wireless Hand microphones

**UHF-Antenna-Holder****Holder . . . . . AH-200TNC**

UHF-Antenna-Holder (1 pair)

50 ohms Antenna cable, equipped with TNC-Connectors. To install the UHF antenna in a distance (in your order please declare the desired cable length).

**Antenna cable, [desired length] . . . . ACT-050/xx TNC**

# 700-FREQUENCIES

## 1 CHANNEL-SYSTEM

**RCS**<sup>®</sup>  
**AUDIO-SYSTEMS**



### UHF WIRELESS-MICROPHONE SYSTEM



Mobile or fixed installation for:

- Exhibitions and Fairs
- Seminars and Schools
- Stage, Church and Sporting Events





synchronization at your fingertips

- New, long-term available frequency range
- Synchronization at the touch of a button
- True diversity technology for safe operation

The newest generation “E” of our successful UWR series provide the user with all the details required for safe operation and convenient handling. Made in the latest SMD technology and equipped with a large display that clearly displays all relevant information. The Auto-Scan function reliably finds interference-free channels and enables the highest transmission quality even in simultaneous operation. The use of the new 630-660 MHz frequency range will ensure operation beyond year 2025.

The matching transmitters UWH-701 E and UWB-700 E are adapted to the receiver in a matter of seconds via the integrated synchronization function.

- True Diversity system for very wide range and stable reception.
- Deductible BNC antennas for use of signal amplifiers, e.g. AB-200 B.
- Up to 12 UWR-701 C systems simultaneously adaptable.

### Information about the frequencies:

Please indicate the use of the 620-640 MHz frequency range at your local branch office of the Federal Network Agency.

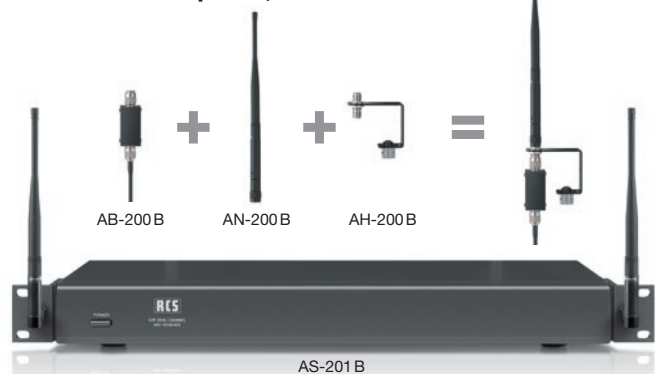


UHF-Receiver with 19"-Installation-Kit (in scope of supply)

**UHF-Receiver**, 700 frequencies, (630-660 MHz) ..... **UWR-701 E**  
complete with mains adapter and antennas

Technical data	UWR-701 E
Frequency Range	630 – 660 MHz (700 Frequencies)
Operating principles	True Diversity
Signal-to-noise ratio	> 94 dB
Frequency response	50 Hz – 15 KHz
Distortion factor	< 1 % (at 1 KHz)
Squelch	„NoiseLock“ Squelch
Audio-Output	MIC = XLR balanced; -20 dB LINE = jack (6,3 mm) unbalanced, 0 dB
Antenna	BNC-Connector
Power supply	12 V DC via power supply
Scope of supply	Receiver, power supply unit, Antenna, cable (jack)
Dimensions	W 200 mm x D 175 mm x H 44.3 mm
Weight	approx. 1 kg

### UHF Antenna-Splitter, Booster and external Antenna



Multi-channel-systems can be assembled with accessory components. The splitter AS-200 B (19", 1 RU) manages up to 4 transmitters UWR-701 C. The booster AB-200 B provides sufficient amplification (+9dB) as an external cable driver.

- External UHF-Antenna**, (pair) ..... **AN-200 B**
- UHF-Antenna-Booster**, (pair) ..... **AB-200 B**
- UHF-Antenna-Holder**, (pair) ..... **AH-200 B**
- UHF-Antenna Splitter**, 1 RU ..... **AS-201 B**
- 19"-Rack Assembly-Set**, for front-assembly the antenna . . . **RU-203 T**

# 1 CHANNEL-SYSTEM / 700 FREQUENCIES



## UHF-Wireless Hand Microphone



CE 03360

UHF handheld microphone, specifically designed with high-quality condenser capsule for voice transmission. The LCD display indicates the battery status and the current channel. The use of the latest technologies to enable a very low power consumption.

The **frequency synchronization** with the UHF receiver UWR-701 E is easily performed using the **sync button**.

Technical data	UWH-701 E
Carrier frequency	630 – 660 MHz (700 frequencies)
Modulation	FM
Transmission	PLL synth.
RF Output Power	10 mW
Frequency response	50 Hz – 15 kHz
Microphone-type	Kondensator
Power supply	2x Mignon (1,5V; AA)
Transmission range	130 – 150 m
Dimensions / Weight	Ø 44,3 mm x L 250 mm; 300 g

**UHF-Hand Microphone, (700 frequencies) ..... UWH-701 E**  
The frequencies are notifiable!

## Neckworn Microphone

3-pin MINI XLR



Very comfortable condenser-neckworn-microphone conducted in the characteristic of a kidney. Due to the low dead-weight and the flexible material this microphone fits all head shapes perfectly. Available in the colours “skin-colour” and “black”.

**Neckworn Microphone, skin-color. .... HS-200 S**  
**Neckworn Microphone, black ..... HS-200 B**

## UHF-Bodypack-Transmitter



CE 03360

Bodypack transmitter to use the headset microphone HS-200 B/S or the lavalier clip LA-200 B. The input sensitivity of the bodypack transmitter is adjustable. This allows the use of microphones and transmission line signals.

The **frequency synchronization** with the UHF receiver UWB-700 C is easily performed using the **sync button**.

3-pin MINI XLR

for LA-200 B  
or HS-200 S/B

Technical data	UWB-700 E
Carrier frequency	630 – 660 MHz (700 frequencies)
Modulation	FM
Transmission	PLL synth.
RF Output Power	10 mW
Frequency response	50 Hz – 15 kHz
Max. deviation	± 48 kHz
Power supply	2x Mignon (1,5V; AA)
Transmission range	120 – 140 m
Dimensions / Weight	W 65 mm x H 100 mm x D 27 mm; 150 g

**UHF-Bodypack, (700 frequencies) ..... UWB-700 E**  
The frequencies are notifiable!

## Lavalier Microphone

3-pin MINI XLR



Condenser lavalier microphone completed in ball-characteristic. Delivery incl. 80 cm cable and clip. The microphone is due to its size very discreet and can clip it to your desired location on the clothing. Available in the color black.

**Lavalier Microphone, black ..... LA-200 B**

## Accessories

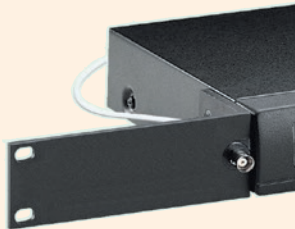
### 19"-Rackmount-Set for one UWR-701 C



19" brackets for one Receiver unit (1 RU).

### Mounting-Set ... **RU-401** 1RU, for one UWR-701 C

### 19"-Rack Mounting-Set for front mounting the antenna



19" mounting bracket for mounting the antenna on the front of one Receiver unit.

### Mounting-Set . **RU-401 T** 1RU, for one UWR-701 C

50 ohms antenna cable, equipped with BNC-Connectors. To install the UHF antenna in a distance (in your order please declare the desired cable length, max. 10 m).

### Antenna cable, [desired length] ... **ACT-050/xx BNC**

### Microphone-Holder for UWH-701 C



The holder comes with a 3/8" and 5/8" thread.

### Mic.-Holder ..... **MH-800** for wireless Hand microphones

### UHF-Antenna-Holder



### Ant.-Holder .... **AH-200 B** (pair)

### UHF-Antenna-Booster

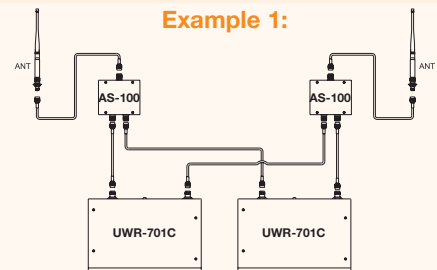


### Ant.-Booster... **AB-200 B** (pair)

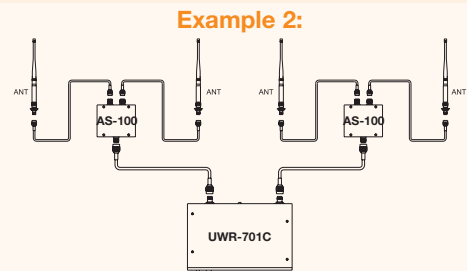
## Accessories

### Splitter- and Combiner-Set AS-100

Depending on the application can be using the AS-100 set to reduced or doubled the number of antennas.



By using 2 St. UHF receivers in just 1 RU, it is useful to reduce the number of antennas accordingly (eg when using the 19" Rack Mounting-Set RU-402 T). If the antennas are installed on a panel front and the cable length is about 10 m, it is recommended to use the additional signal amplifier AB-200 B.



Broadcasting in technically difficult areas such as angled buildings, but also on large areas such as athletic fields or arenas, it may be useful to increase the number of antennas, so as to ensure a uniform, comprehensive signal stability. For cable lengths over 10 meters may cause interference, so an additional signal amplifier AB-200 B is recommended.

### Splitter- and Combiner-Set ..... **AS-100** contain 2 pieces

### Active Directional Antenna for UWR-701 C

UHF directional antenna with integrated signal booster (+10 dB). The receiving area can be optimized through aligning of the antenna. RF interference outside the beam width can be effectively excluded. Suited to the optional AH-300 antenna bracket for wall, ceiling or tripod mounting.



### Active Directional Antenna ..... **AN-300** Antenna-Holder ..... **AH-300** for AN-300, with 3 / 8 " thread for wall, ceiling or tripod mount

# TOUR GUIDE-SYSTEM

*UHF-wireless*

**RCS**<sup>®</sup>  
**AUDIO-SYSTEMS**



Ideally suited for:

- City Tours
- Operational facilities or Museums
- Presentations of any kind

FREQ  
**16**





- Simultaneous operation of up to 3 systems
- Presentations and Industrial Management
- Multilingual Conferences

### Description

Tour guides in castles and museums, factory tours or product presentations – these are the applications for the new UHF transmission tour-guide system.

The use of UHF technology and high-quality microphones guarantees a clear speech transmission at the highest level.

An additional signal input at the transmitter enables you to feed parallel to the transmission additional music or speech prepared texts.

In connection with the accessories offered results in a

functional set that is ever assembled on demand and can be expanded.

- 16 frequencies – Registration free operation
- Low power consumption
- Volume control on the transmitter and on the receiver
- Line input for supplying additional signal as sample music or prepared texts
- Line output for further signals processing such as recording and documentations of a presentation.
- Display for the channel, the battery status and signal strength

### Example of use: MOBILE TOUR-GUIDE SYSTEM

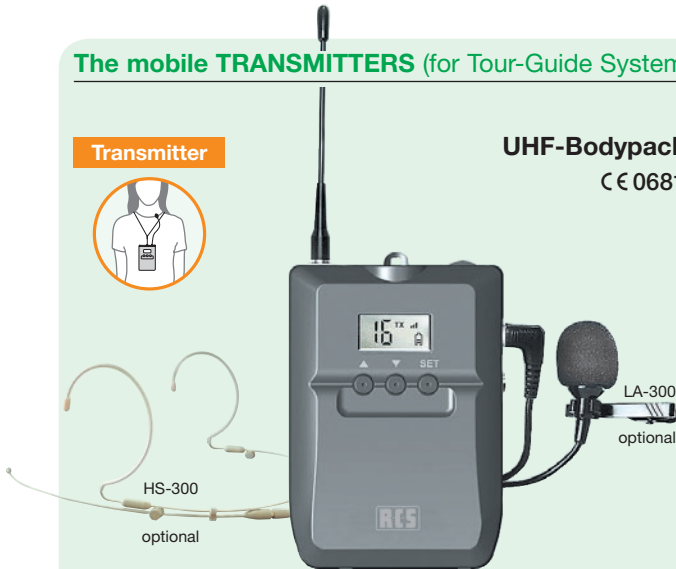


The mobile TRANSMITTERS (for Tour-Guide System) are either available:

**Transmitter**



**UHF-Bodypack**  
CE 0681



**Description**

Bodypack transmitter in a discreet and inconspicuously design. Within the scope of supply there is a lavalier microphone and a leather case to protect the transmitter. If necessary the lavalier microphone LA-300 or the headset microphone HS-300 are used.

- Lavalier-Microphone** ..... **LA-300**
- Headset-Microphone**, (863-865 MHz) ..... **HS-300**
- UHF-Bodypack**, (863-865 MHz) ..... **UBT-016**

**UHF-Hand Microphone**  
CE 0681

**Transmitter**



**Description**

Hand-held microphone with a large display for the channel and battery status. The microphone has a volume control; the sensitivity can be switched from MIC to LINE.

- UHF-Hand Microphone**, (863-865 MHz) ..... **UBH-016**

As a **FIXED TRANSMITTER** is available:

**UHF-Transmitter**  
CE 0681

**Transmitter**



**Description**

Fixed transmitters, particularly well suited for presentations or demonstrations at constant locations. MIC and LINE input for supplying various signals.

Registration free operation.

- UHF-Transmitter**, (863-865 MHz) ..... **UWT-016**

As **RECEIVER** (for auditors) is available:

**UHF-Receiver**

**Receiver**



**Description**

The UBR-016 receiver can be operated either with the earphone EP-200 or with the stereo headphones SHP-300. A leather case to protect the receiver is included.

- Earphone**, one sided ..... **EP-200**
- UHF-Receiver**, (863-865 MHz) ..... **UBR-016**

### Accessories

#### Charger-Kit

for 2 pcs. UBH-016



Charger for 2 handheld microphones UBT-016. Power supply included.

#### Charger-Kit

for 8 pcs. UBR-016 or UBT-016



Charger Kit for up to 8 receivers or transmitters. Power supply included.

#### Charger-Kit . . . . ACS-002

for 2 pcs. UBH-016

#### Charger-Kit . . . . ACS-008

for 8 pcs. UBR-016 or UBT-016

#### Charger-Bag

for 20 pcs. UBR-016 or UBT-016



Convenient carrying case with integrated charger for up to 20 receivers or transmitters.

#### Charger-Case

for 40 pcs. UBR-016 or UBT-016



Stable Charging Case for up to 40 receivers or transmitters. Additional space for headphones and microphone power supply. With extendable handles and wheel for an easy transport.

#### Charger-Bag . . . ACS-020

for 20 pcs. UBR-016 or UBT-016

#### Charger-Case . ACS-040

for 40 pcs. UBR-016 or UBT-016

#### 19"-Rack Mounting-Set

for 1 pcs. UWT-016



19" Mounting bracket for the fixed transmitter UWT-016. With TNC connector for front mounting of the antenna.

#### Mounting-Set . RU-501 T

1 RU, for 1 pcs. UWT-016

#### Battery Set AAA

rechargeable, for UBR-016 / UBT-016



Set contents 2 pieces NiMH batteries (AAA).

#### Battery Set . . . . UBA-002

2x NiMH AAA; for UBR-016 / UBT-016

#### Battery Set AA

rechargeable, for UBH-016



Set contents 2 pieces NiMH batteries (AA).

#### Battery Set . . . . UBB-002

2x NiMH AA; for UBH-016

Technical data	UBR-016 RECEIVER
Frequency range	863 – 865 MHz (16 frequencies)
Transmission type	PLL synth.
Signal to noise ratio	80 dB
Audio-frequency range	50 Hz – 15 kHz ±3dB
Audio output line	0dB
Headphone output	3,5 mm jack
Max hub	± 40 kHz
Power supply	2x Micro (1,5V; AAA) or rechargeable battery
Range	50 – 80 m
Dimensions / weight	W 60 mm x H 85 mm x D 19 mm; approx. 60 g

Technical data	UBT-016 TRANSMITTER
Frequency range	863 – 865 MHz (16 frequencies)
Transmission type	PLL synth.
Signal to noise ratio	80 dB
Audio-frequency range	50 Hz – 15 kHz ±3dB
Audio output line	0dB
Microphone input	3,5 mm, jack
Max. Hub	± 40 kHz
Power supply	2x Micro (1,5V; AAA) or rechargeable battery
Range	50 – 80 m
Dimensions / weight	W 60 mm x H 85 mm x D 19 mm; approx. 60 g

Technical data	UWT-016 TRANSMITTER
Frequency range	863 – 865 MHz (16 frequencies)
Modulation	FM
Transmission type	PLL synth.
RF Output Power	10 mW
Audio-frequency range	50 Hz – 15 kHz ±3dB
Max. Hub	± 48 kHz
Power supply	DC 12V
Range	50 – 80 m
Dimensions / weight	W 210 mm x H 44 mm x D 190 mm; 150 g

Technical data	UBH-016 TRANSMITTER
Frequency range	863 – 865 MHz (16 frequencies)
Modulation	FM
Transmission type	PLL synth.
RF Output Power	10 mW
Audio-frequency range	50 Hz – 15 kHz ±3dB
Max. Hub	± 40 kHz
Power supply	2x Mignon (1,5V; AA) or rechargeable battery
Range	50 – 80 m
Dimensions / weight	W 37 mm x H 165 mm x D 28 mm; 100 g



»MOBILE-SOUND«  
**Mobile speaker systems  
and Power Megaphones**



**12**  
Page  
287 – 330

Part 12



**600w**  
**2 SPEAKER SYSTEM**  
**+300W (optional)**

**UHF-SYSTEM:**  
Registration and  
Free of charge!

- Compact PA-System
- Mobile usage for up to 400 listeners
- Wireless UHF technology (expandable to 4-channel)

This mobile PA-System PCS-500 has **3x 300W (RMS)** performance and is suited for professional sounding for up to 400 people. Optimal results can be achieved through carefully selected, complementary components. This compact and user friendly system can be ready for operation within a few minutes. The mobile set of wheels makes handling very easy with little effort.

**This system includes the following components:**

- 1x PMX-911 R Power Mixer 3x 300W (RMS)**  
Including 9 input-channels (4x stereo-CH) and diversity of outputs
- 2x QRF-210 Professional 2-Way Speaker**  
Full Range, including 10m Connection cables each
- 2x Floor Stands**  
Adjustable height from 115 cm up to 200 cm
- 1x CD / MP3 / DVD-Player with Remote**  
The unit will play all common audio formats such as: CD/CD-R/RW, MP3, VCD, SVCD, DVD, DVD+R/RW, WMA, Picture CD and XviD
- 1x UHF Receiver-System, 1-Channel**  
16 frequencies (registration free), with wireless Hand microphone optionally expandable up to 4 channels (see UR-016 on page 276)
- 1x Professional Rack-Flightcase**  
19", 10 RU, with rounded corners and 25mm aluminum edge protection

**Please consider the following:**

The PCS-500 System will be delivered fully assembled and is best suited for mobile usage as well as stationary operation. Please extract further technical data regarding the individual components from our main catalogue.

★

Technical data		PCS-500
<b>Mixer</b>	Inputs	9x Mic In: -50dBu
	Inputs CH1-7 (mono)	Line In: -20dBu
	Inputs CH8-11 (stereo)	Line In: -10dBu 1x Aux In: -10dBu 1x Tape In: -10dBu
<b>RMS/Program power</b>		3x 300/900W at 4 ohms; 3x 200/300W at 8 ohms
<b>Speaker</b>		220W (RMS), 350W (MAX), with Speaker IN/Out; Fullrange with 1,29" tweeter, 10" bass-woofer
Speaker Floor Stand		Aluminium tube Ø 36mm, adjustable 115-200mm,
<b>Microphone Wireless System</b>		UHF 16 frequencies (863-865 MHz), 1-channel
System	Power supply	220V - 240V/AC, 50-60 Hz
	Power absorption	approx. 1.350W
	Dimensions/Weight	W 550 x H 510 x D 500mm (Angle-Flightcase); 75 kg

**PORTABLE COMPACT-SYSTEM, 600/+300W ... PCS-500**  
with 2 professional 2-way speakers and accessories (see image)

# PCS-600 PORTABLE COMPACT-SYSTEM

COMPACT PA-SYSTEM FOR MOBILE OPERATION

# RCS



**600W**  
**2 SPEAKER SYSTEM**

**UHF-SYSTEM:**  
Registration and  
Free of charge!

- Compact PA-System
- Mobile usage for up to 600 listeners
- Wireless UHF technology (expandable to 4-channel)

This mobile PA-System PCS-600 has **2x 300W** (RMS) performance and is suited for professional sounding for up to 600 people. Optimal results can be achieved through carefully selected, complementary components. This compact and user friendly system can be ready for operation within a few minutes. The mobile set of wheels makes handling very easy with little effort.

### Please consider the following:

The PCS-600 System will be delivered fully assembled and is best suited for mobile usage as well as stationary operation.

### This system includes the following components:

- 1x PMX-614 Power Mixer 2x 300W (RMS)**  
Including 14 input-channels (6x Mono-CH) and diversity of outputs
  - 2x QRF-212 Professional 2-Way Speakers**  
Full Range, including 10m Connection cables each
  - 2x Floor Stands**  
Adjustable height from 115 cm up to 200 cm
  - 1x CD/MP3/SD-Card/USB player**  
with pitchable CD player and remote control
  - 1x UHF Receiver-System, 1-Channel**  
16 frequencies (registration free), with wireless Hand microphone optionally expandable up to 4 channels (see UR-016 on page 276)
  - 1x Professional Angle-Flightcase**  
19", 10 RU, incl. rack rail lifting device on the top and mobile set of wheels
- Various Accessories**  
Including Rack drawer, Connection Cable, Power splitter, etc.

eration. Please extract further technical data regarding the individual components from our main catalogue.

★

Technical data		PCS-600
<b>Mixer</b>	Inputs CH1-6 (mono)	Mic In: -55dBu (1,38mV) 50-600 ohms,
	Inputs CH7-14 (stereo)	Line In: -35dBu (13,8mV), 600 ohms Stereo In: 0dBu (775mV), 600 ohms
	RMS/Program power	2x 300/450W at 4 ohms; 2x 200/340W at 8 ohms
<b>Sound Control Channel</b>		Highs: 12kHz shelving ±15dB Mids: 2,5kHz peaking ±12dB Mids for CH 1-3: semiparam. 100Hz-8kHz ±12dB Lows: 80Hz shelving ±15dB Low Cut: 18dB/Okt. @ 75Hz
	<b>Speaker</b>	250W (RMS), 400W (MAX), with Speaker IN/Out; 1,29" tweeter, 12" Fullrange
	<b>Floor Stand</b>	Aluminium tube Ø 36mm, adjustable 115-200mm,
	<b>Microphone Wireless System</b>	UHF 16 frequencies (863-865 MHz), 1-channel
	<b>System</b>	Power supply: 220V - 240V/AC, 50-60 Hz Power absorption: approx. 1.200W Wheels: 4 steering rollers 100 mm, 2 with brakes (Blue-Wheels) Dimensions/Weight: W 550 x H 570 x D 560mm (Angle-Flightcase); 43 kg

**PORTABLE COMPACT-SYSTEM, 600W . . . . . PCS-600**  
with 2 professional 2-way speakers and accessories (see image)



**1200W**  
**4 SPEAKER SYSTEM**

**UHF-SYSTEM:**  
Registration and  
Free of charge!

- Compact PA-System
- Mobile usage for up to 1.200 listeners
- Wireless UHF technology (expandable to 4-channel)

This mobile PA-System PCS-1200 has **2x 600W** (RMS) performance and is suited for professional sounding for up to 1.200 people. Optimal results can be achieved through carefully selected, complementary components. This compact and user friendly system can be ready for operation within a few minutes. The mobile set of wheels makes handling very easy with little effort.

**Please consider the following:**

The PCS-1200 System will be delivered fully assembled and is best suited for mobile usage as well as stationary opera-

tion. Please extract further technical data regarding the individual components from our main catalogue.

★

**This system includes the following components:**

- 1x PMX-1216 Power Mixer 2x 600W (RMS)**  
Including 16 input-channels (8x Mono-CH) and diversity of outputs
- 4x QRF-212 Professional 2-Way Speakers**  
Full Range, including 10m Connection cables each
- 4x Floor Stands**  
Adjustable height from 115 cm up to 200 cm
- 1x CD/MP3/SD-Card/USB player**  
with pitchable CD player and remote control
- 1x UHF Receiver-System, 1-Channel**  
16 frequencies (registration free), with wireless Hand microphone optionally expandable up to 4 channels (see UR-016 on page 276)
- 1x Professional Angle-Flightcase**  
19", 10 RU, incl. rack rail lifting device on the top and mobile set of wheels

**Various Accessories**  
Including Rack drawer, Connection Cable, Power splitter, etc.

Technical data		PCS-1200
<b>Mixer</b>	Inputs CH1-8 (mono)	Mic In: -55dBu (1,38mV) 50-600 ohms,
	Inputs CH9-16 (stereo)	Line In: -35dBu (13,8mV), 600 ohms Stereo In: 0dBu (775mV), 600 ohms
	RMS/Program power	2x 600/900W at 4 ohms; 2x 350/520W at 8 ohms
	Sound Control Channel	Highs: 12kHz shelving ±15dB Mids: 2,5kHz peaking ±12dB Mids for CH 1-4: semiparam. 100Hz-8kHz ±12dB Lows: 80Hz shelving ±15dB Low Cut: 18dB/Okt. @ 75Hz
<b>Speaker</b>	250W (RMS), 400W (MAX), with Speaker IN/Out; 1,29" tweeter, 12" Fullrange	
<b>Floor Stand</b>	Aluminium tube Ø 36mm, adjustable 115-200mm,	
<b>Microphone Wireless System</b>	UHF 16 frequencies (863-865 MHz), 1-channel	
<b>System</b>	Power supply	220V - 240V/AC, 50-60 Hz
	Power absorption	approx. 2.200W
	Wheels	4 steering rollers 100 mm, 2 with brakes (Blue-Wheels)
	Dimensions/Weight	W 550 x H 570 x D 560mm (Angle-Flightcase); 43 kg

**PORTABLE COMPACT-SYSTEM, 1200W . . . . . PCS-1200**  
with 4 professional 2-way speakers and accessories (see image)

# PCS-1200 L PORTABLE COMPACT-SYSTEM

COMPACT PA-SYSTEM FOR MOBILE OPERATION

# RCS



**UHF-SYSTEM:**  
Registration and  
Free of charge!

- Compact **HORIZONTAL-LINE-ARRAY** PA-System
- Mobile usage for up to 1.000 listeners
- Wireless UHF technology (expandable to 4-channel)

This Horizontal-Line-Array PA-System PCS-1200L has **2x 600W** (RMS) performance and is suited for professional sounding for up to 1.000 people. Optimal results can be achieved through carefully selected, complementary components and the Line-Array-Principle. This compact and user friendly system can be ready for operation within a few minutes. The mobile set of wheels makes handling very easy with little effort.

**Please consider the following:**

The PCS-1200L System will be delivered fully assembled

**This system includes the following components:**

- 1x PMX-1216 Power Mixer 2x 600W (RMS)**  
Including 16 input-channels (8x Mono-CH) and diversity of outputs
  - 2x QRF-2212 Professional 2-Way Speakers**  
Horizontal-Line-Array, Full Range, including 10m Connection cables each
  - 2x Floor Stands**  
Adjustable height from 115 cm up to 200 cm
  - 1x CD/MP3/SD-Card/USB player**  
with pitchable CD player and remote control
  - 1x UHF Receiver-System, 1-Channel**  
16 frequencies (registration free), with wireless Hand microphone optionally expandable up to 4 channels (see UR-016 on page 276)
  - 1x Professional Angle-Flightcase**  
19", 10 RU, incl. rack rail lifting device on the top and mobile set of wheels
- Various Accessories**  
Including Rack drawer, Connection Cable, Power splitter, etc.

and is best suited for mobile usage as well as stationary operation. Please extract further technical data regarding the individual components from this catalogue.

★

Technical data		PCS-1200 L	
<b>Mixer</b>	Inputs CH1-8 (mono)	Mic In: -55dBu (1,38mV) 50-600 ohms,	
	Inputs CH9-16 (stereo)	Line In: -35dBu (13,8mV), 600 ohms Stereo In: 0dBu (775mV), 600 ohms	
	RMS/Program power	2x 600/900W at 4 ohms; 2x 350/520W at 8 ohms	
	Sound Control Channel	Highs:	12kHz shelving ±15dB
		Mids:	2,5kHz peaking ±12dB
Mids for CH 1-4: semiparam.		100Hz-8kHz ±12dB	
	Lows:	80Hz shelving ±15dB	
	Low Cut:	18dB/Okt. @ 75Hz	
<b>Speaker</b>		250W (RMS), 400W (MAX), with Speaker IN/Out; 1,29" tweeter, 2x 12" Fullrange	
<b>Floor Stand</b>		Aluminium tube Ø 36mm, adjustable 115-200mm,	
<b>Microphone Wireless System</b>		UHF 16 frequencies (863-865 MHz), 1-channel	
<b>System</b>	Power supply	220V - 240V/AC, 50-60 Hz	
	Power absorption	approx. 2.200W	
	Wheels	4 steering rollers 100 mm, 2 with brakes (Blue-Wheels)	
	Dimensions / Weight	W 550 x H 570 x D 560mm (Angle-Flightcase); 43 kg	

**PORTABLE COMPACT-SYSTEM, 1200W... PCS-1200 L**  
with 2 professional 2-way Horizontal-Line-Array speakers and accessories (see image)



# DIGITAL SOUND-CENTER 150

# RCS®

mobile sound



- Seminars and Conferences
- Advertising and Sales Promotion
- Exhibitions and Fairs
- Hotels and Sporting Events
- Schools and Presentations



optional with:





Registration and Free of charge!

16 Frequencies!



- 2-way system
- Powerfull class D amplifier
- True Diversity
- VOICE-OVER function

The self-powered loudspeaker system DSC-150 is perfectly suited for all tasks that call for premium mobile sound. The unit convinced with rich, crystal-clear sound in its category.



The 150W RMS amplifier is implemented in class D technology, thus offering an exceptionally good efficiency. The resulting low power consumption ensures very good endurance when operated on battery power, especially for the amount of power that's offered here.

Of course the sturdy and scratch-resistant plastic housing is designed to cope with the challenges of mobile use. The pre-mounted

wheels and telescopic handle makes it significantly easier to transport the unit.

The basic unit DSC-150 can be equipped as needed with up to two UHF receiver modules (U1/U2) or a pass device. It can

**The following basic models are available:**

- DIGITAL SOUND-CENTER\*** ..... **DSC-150**  
Basic version, without UHF-Receiver module
- DIGITAL SOUND-CENTER\*** ..... **DSC-150 U1**  
with integrated 1-channel UHF-Receiver
- DIGITAL SOUND-CENTER\*** ..... **DSC-150 U2**  
with integrated 2-channel UHF-Receiver

\*The Sound Source Modules are optional available.

**Modules for DIGITAL SOUND-CENTER:**

When ordered with a sound source module the DIGITAL SOUND-CENTER is fully assembled and ready for operation.



**CD/MP3/USB/SD-Card Player** ..... **DSM-003 CD**  
with pitch control and remote control. Player for playing commercial formats, integrated pitch control to affect the playback speed.



**Digitaler USB/SD-Card Recorder** ..... **DSM-002 AR**  
with remote control; for recording and playing



DSC-016 B



DSM-100 BT

**UHF-Receiver Module** True-Diversity technology ..... **DSC-016 B**  
for upgrading, 16 selectable frequencies (863-865 MHz)

**BT-Module** ..... **DSM-100 BT**  
for upgrading, for audio transmission from Smartphone, Tablet or PC



**BT-Module** ..... **DSM-200 BT**  
for upgrading, for audio transmission from Smartphone, Tablet or PC



## KOMPLETTSETS zur vereinfachten Bestellung:

### SET 1

DSC-150 without UHF-receiver and microphone,  
- incl. CD-Player DSM-003 CD

**DSC-150 SET 1** ..... **DSC-150 S1**

### SET 2

DSC-150 with integrated 1-channel UHF-receiver  
- incl. CD-player DSM-003 CD  
- incl. UHF-receiver and hand held microphone UH-016B

**DSC-150 SET 2** ..... **DSC-150 S2**

### SET 3

DSC-150 with integrated 1-channel UHF-receiver  
- incl. CD-player DSM-003 CD  
- incl. UHF-receiver and bodypack UB-016  
- incl. Headset microphone HS-200 S/B

**DSC-150 SET 3** ..... **DSC-150 S3**

### SET 4

DSC-150 with integrated 2-channel UHF-receiver  
- incl. CD-player DSM-003 CD  
- incl. 2x UHF-receiver & 2 hand held microphones UH-016B

**DSC-150 SET 4** ..... **DSC-150 S4**

### SET 5

DSC-150 with integrated 2-channel UHF-receiver  
- incl. CD-player DSM-003 CD  
- incl. UHF-receiver and bodypack UB-016  
- incl. UHF-Hand microphone UH-016B  
- incl. Headset microphone HS-200 S/B

**DSC-150 SET 5** ..... **DSC-150 S5**

## DIGITAL SOUND-CENTER Accessories:

### Carriage and Storage Cover



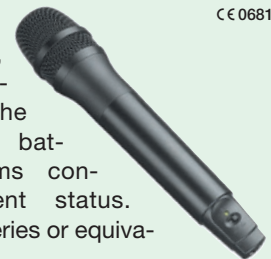
High-quality, weatherproof vinyl fabric cover for carriage, while use and storage of the DIGITAL SOUND-CENTER.

**Carriage and Storage Cover** ..... **VC-150**  
for DSC-150 or auxiliary speaker

### UHF-Accessories:

#### UHF-Hand microphone

Electret hand microphone, optimized for voice. 16 selectable frequencies in the registration-free area. The battery status indicator informs continuously about the current status. Power is supplied by 2 AA batteries or equivalent batteries.



CE 0681

**UHF-Hand Microphone** (863-865 MHz) ..... **UH-016B**

#### UHF-Bodypack (for LA-200B bzw. HS-200)

Bodypack transmitter for using the microphones LA-200B and HS-200. 16 selectable frequencies in the registration-free area. With battery level indicator and detachable antenna. Power is supplied by 2 AA batteries or equivalent batteries.



CE 0681

**UHF-Bodypack** (863-865 MHz) ..... **UB-016B**

#### Lavalier-Microphone

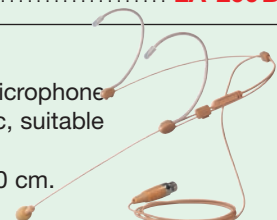
Condenser microphone completed in ball-characteristic, suitable for bodypack UB-016. The cable length is 90 cm.



**Lavalier-Microphone** ..... **LA-200B**

#### Headset-Microphone

Very comfortable condenser microphone completed in ball-characteristic, suitable for bodypack UB-016. The cable length is approx. 100 cm.



**Headset-Mikrophon, skin-color** ..... **HS-200 S**  
**Headset-Mikrophon, black** ..... **HS-200 B**

## DIGITAL SOUND-CENTER Accessories:

### Carriage and Storage Bag

This rip-proof, water resistant, vinyl and fabric bag has two inner pockets for up to three stands, a zip closure and carry handles.



### Carriage and Storage Bag ..... **CB-130**

for up to 2 speaker tripods and 1 mic stand

### Connecting Cable, 30 m Auxiliary Speaker ..... **AC-300**

### Auxiliary Speaker

With help of the passive auxiliary speaker DSC-150ZL the degree of system efficiency can be improved.

### Auxiliary Speaker ..... **DSC-150 ZL**

passive 150 W, for SOUND-CENTER



### Floor Stand

Very stable floor stand made of aluminum (weight 3,2 kg) for setting up the DSC-150 models. The stepless height adjustment allows optimum adaptation to local conditions.

### Floor Stand ..... **QST-185**

for DSC-150 or  
Auxiliary Speaker DSC-150 ZL



Technical Data	DSC-150
Program capacity / RMS	250 W / 150 W (Class-D)
Power	AC 230 V or DC 24 V/3 A
Battery	24 V / 5 Ah
Operating time battery	6 - 8 hours
Speaker	10" Woofer, 1.5" Horn Tweeter
Inputs	Line In jack 6,3 mm; Line In Cinch; MIC XLR; MIC jack 6,3;
Outputs	MIX OUT jack 6,3 mm; Speaker OUT 4-16 ohms
UHF-Receiver	True Diversity, 863-865 MHz, max. 2 pcs.
Tone regulation	double
Case	ABS
Dimensions/Weight	H 500 x W 320 x D 360 mm, 16 kg

★

# DIGITAL SOUND-CENTER 100

# RCS<sup>®</sup>

mobile sound



- Seminars and Conferences
- Advertising and Sales Promotion
- Exhibitions and Fairs
- Hotels and Sporting Events
- Schools and Presentations



optional with:





- 2-way system
- Powerful class D amplifier
- True diversity
- VOICE-OVER function

The little brother of the Digital Sound-Center DSC-150 has all basic functions and expansions option like this. The unit convinced with rich, crystal-clear sound in its category.

The 100W RMS amplifier is implemented in class D technology, thus offering an exceptionally good efficiency. The resulting low power consumption ensures very good endurance when operated on battery power, especially for the amount of power that's offered here.

The pre-assembled wheels and the pull out handle make it easier to transport the unit.

The basic unit DSC-100 can be equipped as needed with up to two UHF receiver modules (U1/U2) or a pass device. It can be selected between a multi-functional player and a digital USB/SD recorder. Instead of a UHF receiver module the unit can be also equipped with the optional BT module DSM-100BT.

★

**The following basic models are available:**

- DIGITAL SOUND-CENTER\*** ..... **DSC-100**  
Basic version, without UHF-receiver module
- DIGITAL SOUND-CENTER\*** ..... **DSC-100 U1**  
with integrated 1-channel UHF-receiver
- DIGITAL SOUND-CENTER\*** ..... **DSC-100 U2**  
with integrated 2-channel UHF-receiver

\*The Sound Source Modules are optional available.

**Modules for DIGITAL SOUND-CENTER:**

When ordered with a sound source module the DIGITAL SOUND-CENTER is fully assembled and ready for operation.



**CD/MP3/USB/SD-Card Player** ..... **DSM-003 CD**  
with pitch control and remote control. Player for playing commercial formats, integrated pitch control to affect the playback speed.



**Digitaler USB/SD-Card Recorder** ..... **DSM-002 AR**  
with remote control; for recording and playing



DSC-016 B



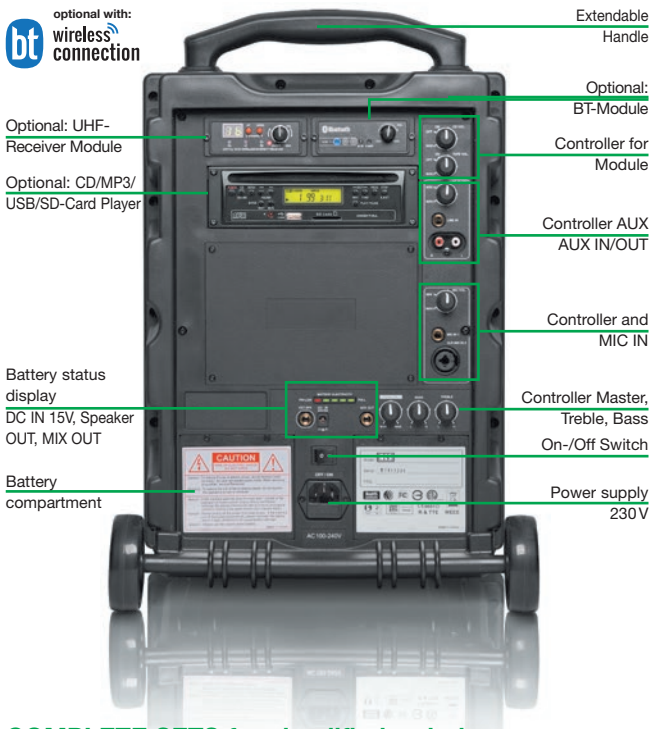
DSM-100 BT

**UHF-Receiver Module** True-Diversity technology ..... **DSC-016 B**  
for upgrading, 16 selectable frequencies (863-865 MHz)

**BT-Module** ..... **DSM-100 BT**  
for upgrading, for audio transmission from Smartphone, Tablet or PC



**BT-Module** ..... **DSM-200 BT**  
for upgrading, for audio transmission from Smartphone, Tablet or PC



## COMPLETE SETS for simplified ordering:

### SET 1

DSC-100 without UHF-receiver and microphone,  
- incl. CD-player DSM-003 CD

**DSC-100 SET 1** ..... **DSC-100 S1**

### SET 2

DSC-100 with integrated 1-channel UHF-receiver  
- incl. CD-player DSM-003 CD  
- incl. UHF-receiver and hand held microphone UH-016 B

**DSC-100 SET 2** ..... **DSC-100 S2**

### SET 3

DSC-100 with integrated 1-channel UHF-receiver  
- incl. CD-player DSM-003 CD  
- incl. UHF-receiver and bodypack UB-016  
- incl. Headset microphone HS-200 S/B

**DSC-100 SET 3** ..... **DSC-100 S3**

### SET 4

DSC-100 with integrated 2-channel UHF-receiver  
- incl. CD-player DSM-003 CD  
- incl. 2x UHF-receiver & 2 hand held microphones UH-016 B

**DSC-100 SET 4** ..... **DSC-100 S4**

### SET 5

DSC-100 with integrated 2-channel UHF-receiver  
- incl. CD-player DSM-003 CD  
- incl. UHF-receiver and Bodypack UB-016  
- incl. UHF-hand held microphone UH-016 B  
- incl. Headset microphone HS-200 S/B

**DSC-100 SET 5** ..... **DSC-100 S5**

## DIGITAL SOUND-CENTER Accessories:

### Carriage and Storage Cover



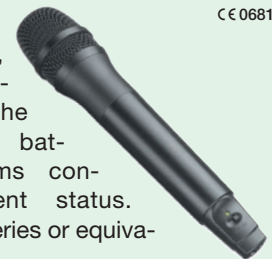
High-quality, weatherproof vinyl fabric cover for carriage, while use and storage of the DIGITAL SOUND-CENTER.

**Carriage and Storage Cover** ..... **VC-100 B**  
for DSC-100 or auxiliary speaker

### UHF-Accessories:

#### UHF-Hand microphone

Electret hand microphone, optimized for voice. 16 selectable frequencies in the registration-free area. The battery status indicator informs continuously about the current status. Power is supplied by 2 AA batteries or equivalent batteries.



CE 0681

**UHF-Hand Microphone** (863-865 MHz) ..... **UH-016 B**

#### UHF-Bodypack (for LA-200 B bzw. HS-200)

Bodypack transmitter for using the microphones LA-200 B and HS-200. 16 selectable frequencies in the registration-free area. With battery level indicator and detachable antenna. Power is supplied by 2 AA batteries or equivalent batteries.



CE 0681

**UHF-Bodypack** (863-865 MHz) ..... **UB-016 B**

#### Lavalier-Microphone

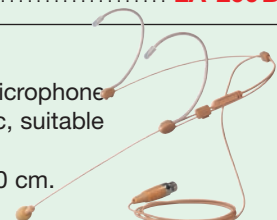
Condenser microphone completed in ball-characteristic, suitable for bodypack UB-016. The cable length is 90 cm.



**Lavalier-Microphone** ..... **LA-200 B**

#### Headset-Microphone

Very comfortable condenser microphone completed in ball-characteristic, suitable for bodypack UB-016. The cable length is approx. 100 cm.



**Headset-Mikrophon, skin-color** ..... **HS-200 S**  
**Headset-Mikrophon, black** ..... **HS-200 B**

## DIGITAL SOUND-CENTER Accessories:

### Carriage and Storage Bag

This rip-proof, water-resistant, vinyl and fabric bag has two inner pockets for up to three stands, a zip closure and carry handles.



### Carriage and Storage Cover ..... **CB-130**

for up to 2 speaker tripods and 1 mic stand

### Connecting Cable, 30 m for Auxilliary Speaker ..... **AC-300**

### Auxiliary Speaker

With help of the passive auxiliary speaker DSC-100ZL the degree of system efficiency can be improved.

### Auxiliary Speaker ..... **DSC-100 ZL**

passive 100 W, for SOUND-CENTER



### Floor Stand

Very stable floor stand made of aluminum for setting up the DSC-100 models. The stepless height adjustment allows optimum adaptation to local conditions.

### Floor Stand ..... **QST-185**

for DSC-100 or Auxiliary Speaker DSC-100 ZL



Technical Data	DSC-100
Program capacity / RMS	165 W / 100 W (Class-D)
Power	AC 230 V or DC 24 V/3 A
Battery	24 V / 5 Ah
Operating time battery	6-8 hours
Speaker	10" Woofer, 1.5" Horn Tweeter
Inputs	Line In jack 6,3 mm; Line In Cinch; MIC XLR; MIC jack 6,3;
Outputs	MIX OUT jack 6,3 mm; Speaker OUT 4-16 ohms
UHF-Receiver	True Diversity, 863-865 MHz, max. 2 pcs.
Tone regulation	double
Case	ABS
Dimensions/Weight	H 440 x W 330 x D 240 mm, 13 kg

# SCHOOL-CUBE 700

**VICBOSS SERIES**

# RCS<sup>®</sup>

mobile sound



- Gymnastics and therapy rooms
- Fairs and Exhibitions
- Demonstrations and Presentations
- Society and Community Centers
- Conferences and Training

bt wireless connection





- **CD/MP3-player with pitch control**
- **BT-function**
- **UHF-receiver system (registration and free of charge)**
- **Powerful sound**

The technically mobile speaker and amplifier system PWA-700 presents itself in modern piano lacquer design, impresses with rich and crystal-clear sound, high battery life and overloading protection. This device is ideal for larger classrooms, lecture halls or sports halls.

The standard integrated multifunction player with BT module supports all common formats and functions. Further the player has a "recording" function on USB or SD card and "pitch control" in order to affect the playback speed.

Depending on the desired version, the school cube has 1 or 2 UHF-receiver for using UH-016B (hand microphone) or UB-016 (bodypack). It can be connected a headset or a clip on microphone. There is a radio receiver system used, the 16 frequencies are in registration-free area.

\*

The following basic models are available:

- SCHOOL-CUBE 700, 85 W** ..... **PWA-730**  
Basic version, with integrated Multifunctions-player, without UHF-receiver\*
- SCHOOL-CUBE 700, 85 W** ..... **PWA-730 U1**  
with integrated Multifunctions-player and 1-channel UHF-receiver\*
- SCHOOL-CUBE 700, 85 W** ..... **PWA-730 U2**  
with integrated Multifunctions-player and 2-channel UHF-receiver\*

\*The UHF-Receiver Modules are optional available.

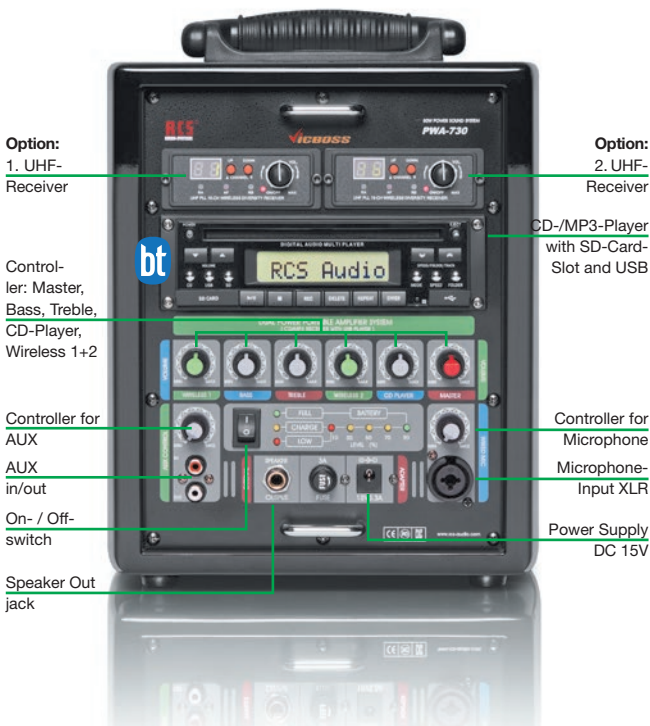
Technical Data	PWA-730 U1/U2
Program capacity / RMS	85 W / 50 W
Power:	15V 3.3 Ah / 12V 7 Ah
Battery:	12V / 7 Ah
Operating time battery	6 - 8 hours
Speaker:	6,5" Full Range
Inputs:	Line In Cinch; Line In XLR/jack
Outputs:	Line Out Cinch; Speaker Out jack
UHF-receiver:	True Diversity, 863-865 MHz, (max. 2 pcs.)
Tone regulation:	double
Case:	MDF
Colour:	glossy black
Dimensions (WxHxD); Weight:	240 x 280 x 245 mm; 8,0 kg

### UHF-Receiver Module:

Please note that a maximum of 2 receiver modules can be installed per PWA-730.



**UHF-Receiver Module** in True-diversity technic ..... **DSC-016 B**  
for upgrading, 16 selectable frequencies (863-865 MHz)



## COMPLETE SETS FOR SIMPLIFIED ORDERING:

### SET 1

PWA-730 without UHF-receiver and microphone,  
- incl. Carriage and storage cover

**PWA-730 SET 1** ..... **PWA-730 S1**

### SET 2

PWA-730 with integrated 1-channel UHF-receiver  
- incl. UH-016B UHF-hand microphone  
- incl. Carriage and storage cover

**PWA-730 SET 2** ..... **PWA-730 S2**

### SET 3

PWA-730 with integrated 1-channel UHF-receiver  
incl. UB-016 UHF-bodypack  
incl. HS-200S/B Headset microphone  
incl. Carriage and storage cover

**PWA-730 SET 3** ..... **PWA-730 S3**

### SET 4

PWA-730 with integrated 2-channel UHF-receiver  
incl. 2 pcs. UH-016B UHF-hand microphones  
incl. Carriage and storage cover

**PWA-730 SET 4** ..... **PWA-730 S4**

### SET 5

PWA-730 with integrated 2-channel UHF-receiver  
incl. UH-016B UHF-hand microphone  
incl. UB-016 UHF-bodypack  
incl. HS-200S/B Headset microphone  
incl. Carriage and storage cover

**PWA-730 SET 5** ..... **PWA-730 S5**

## SCHOOL-CUBE Accessories:

### Carriage and Storage Cover



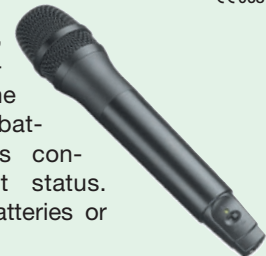
High-quality, weatherproof vinyl fabric cover for carriage, while use and storage of the PWA-730. With removable pocket for accessories

**Carriage and Storage Cover** ..... **VC-070**  
for PWA-730

### UHF-Hand Microphone

€ 0681

Electret hand microphone, optimized for voice. 16 selectable frequencies in the registration-free area. The battery status indicator informs continuously about the current status. Power is supplied by 2 AA batteries or equivalent batteries.



**UHF-Hand Microphone** (863-865 MHz) ..... **UH-016 B**

### UHF-Bodypack (for LA-200 B or HS-200)

€ 0681

Bodypack transmitter for using the microphones LA-200 B and HS-200. 16 selectable frequencies in the registration-free area. With battery level indicator and detachable antenna. Power is supplied by 2 AA batteries or equivalent batteries.



**UHF-Bodypack** (863-865 MHz) ..... **UB-016**

### Lavalier-Microphone

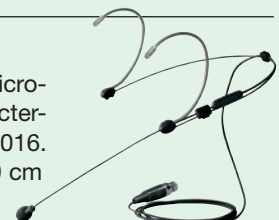
Condenser microphone completed in ball-characteristic, suitable for bodypack UB-016. The cable length is 90 cm.



**Lavalier-Microphone** ..... **LA-200 B**

### Headset-Microphone

Very comfortable condenser microphone completed in ball-characteristic, suitable for bodypack UB-016. The cable length is approx. 100 cm



**Headset-Microphone, skin-color** ..... **HS-200 S**  
**Headset-Microphone, black** ..... **HS-200 B**



# SCHOOL-CUBE 500

**VICBOSS SERIES**

# RCS<sup>®</sup>

mobile sound

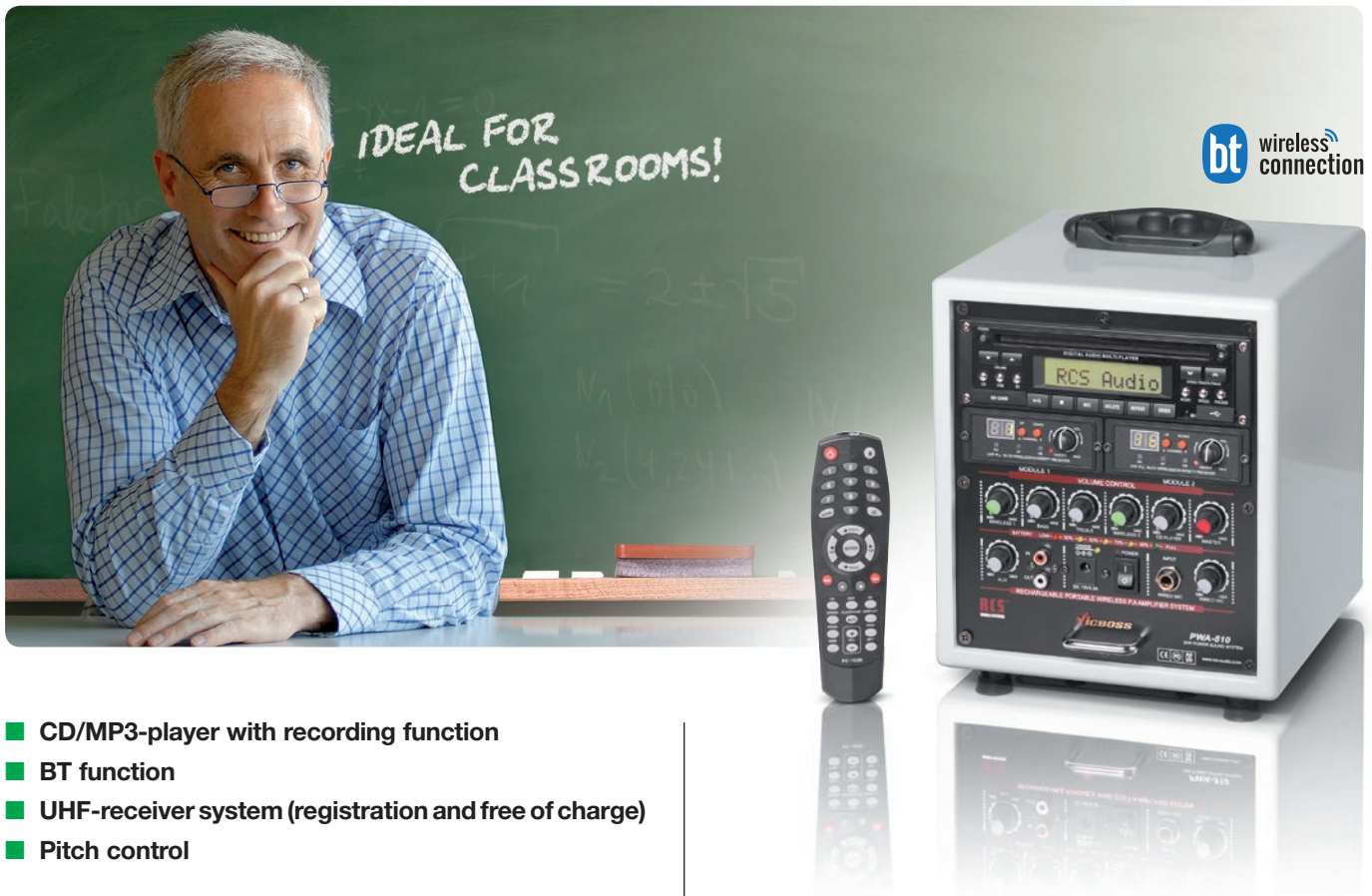


- Classrooms and Offices
- Demonstration and Presentations
- League and Community Centers
- Conferences and Training Courses



bt wireless connection





- CD/MP3-player with recording function
- BT function
- UHF-receiver system (registration and free of charge)
- Pitch control

The technically mobile speaker and amplifier system PWA-510 impresses with rich and crystal-clear sound, high battery life and overloading protection. This device is ideal for classrooms.

The standard integrated multifunction player with BT module supports all common formats and functions. Further the player has a "recording" function on USB or SD card and "pitch control" in order to affect the playback speed.

Depending on the desired version, the school cube has 1 or 2 UHF-receiver for using UH-016B (hand microphone) or UB-016 (bodypack). It can be connected a headset or a clip on microphone. There is a radio receiver system used, the 16 frequencies are in registration-free area.

★

The following basic models are available:

- SCHOOL-CUBE 500, 50 W** ..... **PWA-510**  
Basic version, with integrated Multifunctions-player, without UHF-receiver\*
- SCHOOL-CUBE 500, 50 W** ..... **PWA-510 U1**  
with integrated Multifunctions-player and 1-channel UHF-receiver\*
- SCHOOL-CUBE 500, 50 W** ..... **PWA-510 U2**  
with integrated Multifunctions-player and 2-channel UHF-receiver\*

\*The UHF-Receiver Modules are optional available.

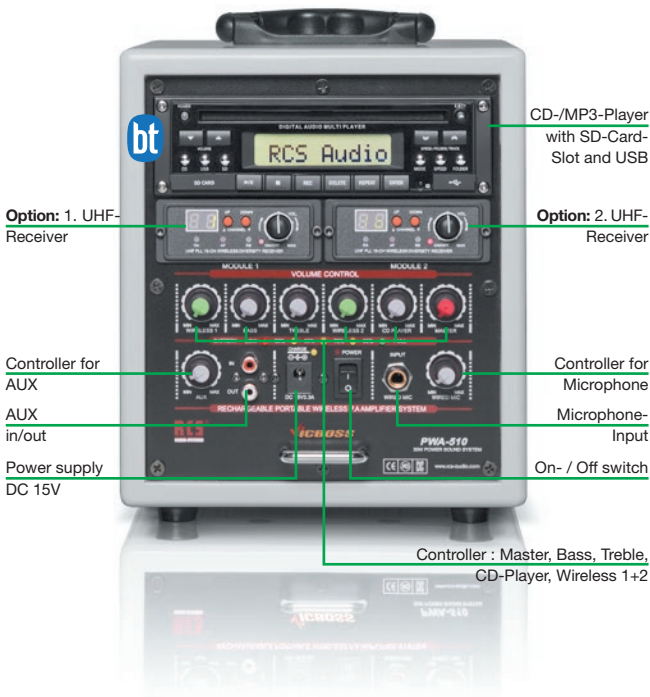
Technical Data	PWA-510 U1/U2
Program capacity / RMS:	50 W / 30 W
Power:	15V 3.3 Ah / 12V 3 Ah
Battery:	12V / 3 Ah
Operating time battery:	6 hours
Speaker:	5" Full Range
Inputs:	Line In Cinch; Line In jack
Outputs:	Line Out Cinch
UHF-receiver:	True Diversity, 863-865 MHz, (max. 2 pcs.)
Tone regulation:	double
Case:	MDF
Colour:	glossy white
Dimensions (WxHxD); Weight	208 x 243 x 220 mm; 6,5 kg

### UHF-Receiver Module:

Please note that a maximum of 2 receiver modules can be installed per PWA-510.



**UHF-Receiver Module** in True-diversity technic ..... **DSC-016B**  
for upgrading, 16 selectable frequencies (863-865 MHz)



## COMPLETE SETS FOR SIMPLIFIED ORDERING:

### SET 1

PWA-510 without UHF-receiver and microphone,  
- incl. Carriage and storage cover

**PWA-510 SET 1** ..... **PWA-510S1**

### SET 2

PWA-510 with integrated 1-channel UHF-receiver  
- incl. UH-016B UHF-hand microphone  
- incl. Carriage and storage cover

**PWA-510 SET 2** ..... **PWA-510S2**

### SET 3

PWA-510 with integrated 1-channel UHF-receiver  
incl. UB-016 UHF-bodypack  
incl. HS-200S/B Headset microphone  
incl. Carriage and storage cover

**PWA-510 SET 3** ..... **PWA-510S3**

### SET 4

PWA-510 with integrated 2-channel UHF-receiver  
incl. 2 pcs. UH-016B UHF-hand microphone  
incl. Carriage and storage cover

**PWA-510 SET 4** ..... **PWA-510S4**

### SET 5

PWA-510 with integrated 2-channel UHF-receiver  
incl. UH-016B UHF-hand microphone  
incl. UB-016 UHF-bodypack  
incl. HS-200S/B Headset Microphone  
incl. Carriage and storage cover

**PWA-510 SET 5** ..... **PWA-510S5**

## SCHOOL-CUBE Accessories:

### Carriage and Storage Cover



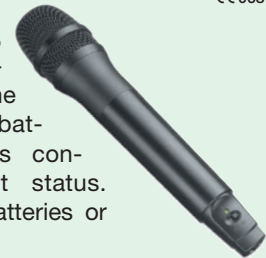
High-quality, weatherproof vinyl fabric cover for carriage, while use and storage of the PWA-510. With removable pocket for accessories.

**Carriage and Storage Cover** ..... **VC-030**  
for PWA-510

### UHF-Hand Microphone

€ 0681

Electret hand microphone, optimized for voice. 16 selectable frequencies in the registration-free area. The battery status indicator informs continuously about the current status. Power is supplied by 2 AA batteries or equivalent batteries.



**UHF-Hand Microphone** (863-865 MHz) ..... **UH-016B**

### UHF-Bodypack (for LA-200B or HS-200)

€ 0681

Bodypack transmitter for using the microphones LA-200B and HS-200. 16 selectable frequencies in the registration-free area. With battery level indicator and detachable antenna. Power is supplied by 2 AA batteries or equivalent batteries.



**UHF-Bodypack** (863-865 MHz) ..... **UB-016B**

### Lavalier-Microphone

Condenser microphone completed in ball-characteristic, suitable for bodypack UB-016. The cable length is 90 cm.



**Lavalier-Microphone** ..... **LA-200B**

### Headset-Microphone

Very comfortable condenser microphone completed in ball-characteristic, suitable for bodypack UB-016. The cable length is approx. 100 cm



**Headset-Microphone, skin-color** ..... **HS-200S**  
**Headset-Microphone, black** ..... **HS-200B**



# PROCESSING SYSTEM

**RCS**<sup>®</sup>  
mobile sound



- Processions and pageants
- Small worship and blessing halls
- Propagandists
- Guided tours, fairs and exhibitions





- State-of-the-art, sleek design
- Low total weight of only 4.8 kg
- Neodymium speakers for clear sound
- Wireless UHF transmission technology
- SSD / USB player available as an option

Registration free  
operation

The procession system WPS-220A not only impresses with its successful design. It scores over conventional systems by the use of high-quality Neodymium speakers and the resulting excellent sound. With its very low weight of less than 5 kg, the portable WPS-220A is ideal for long-lasting processions and events.

The system has power-saving digital amplifier technology. In conjunction with the included NiMH Accu set results in an operating time of about 6 hours.

The optionally available SD / USB / BT player allows music or pre-recorded text to be recorded at any time. A UHF handheld microphone and a bodypack transmitter with a headset microphone are available for speeches and announcements..

Please consider the following features:

- The process plant has two separate power channels with 2x 20W based on digital T-Class amplifiers.

### Model designations

**Wireless Procession-System, 2 x 20 W, . . . . . WPS-220A**  
with built-in 2-channel UHF wireless microphone receiver  
including: carrying strap, rain cover, microphone, power adapter (charger)

- The upper loudspeaker segment can be rotated steplessly up to 180 degrees, thus allowing the desired orientation for a front / rear sound of the procession or for the front sound with an adjustable beam angle.
- The delivery includes a carrying strap, a rain cover and a power adapter (charger).

★



Technical data	WPS-220 A
Program capacity / RMS	60 W/40 W
Power AC	24 V mains or battery
Operating time Battery	approx. 6-7 Stunden
Speaker	4 x 3,5" broadband, Neodymium, swiveling
Inputs	2x UHF-Receiver 1x USB/SD-Card/BT-Player (optional) 1x MIC Jack 6,3 mm 1x Line-In Cinch
Outputs	1x Line-Out XLR
UHF-Receiver System	800 MHz
Tone regulation	2-fach
Tripod holder	ja, Ø 35 mm drill-hole
Case	Aluminium (coated)
Dimensions (WxHxD); Weight	104 x 1350 x 115 mm; 4,8 kg

# PORTABLE PROCESSING SYSTEM



Control panel of the WIRELESS  
PROCESSION-SYSTEMS:

**Optional:**

Module DSM-200 BT  
USB / BT / SD-Card Slot



LED indicator:  
Connected UHF-Receiver 1

LED indicator:  
Connected UHF-Receiver 2

Controller for Microphone  
(Volume control, 2-Band EQ)

Controller for UHF-Microphone  
(Volume control, 2-Band EQ)

LINE Input  
0dB (r.g. for CD-Player)

Microphone input  
Combo socket

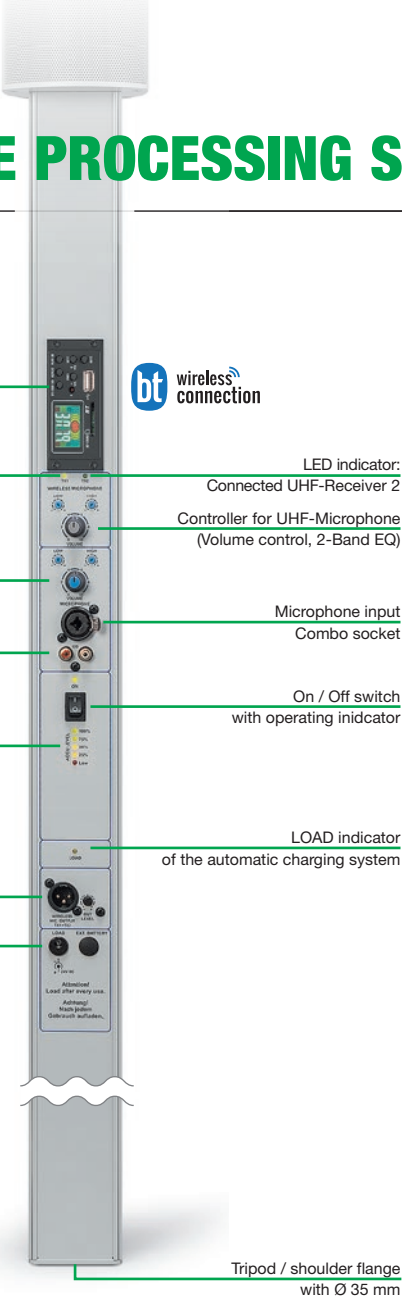
LED charge status indicator  
of the battery

On / Off switch  
with operating indicator

LOAD indicator  
of the automatic charging system

Microphone output  
with controller for output level

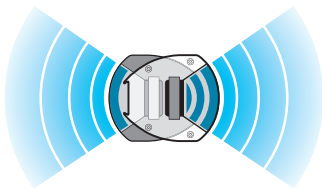
Charging socket  
24V DC



Tripod / shoulder flange  
with Ø 35 mm

Front and rear sound  
e.g. for long-drawn procession

Front sound  
with wide beam angle



Optional module

**BT module**

For audio transmission from smartphone, tablet or PC via BT. From SD card or USB port audio files can also be played directly. The module is delivered incl. Remote Control



**BT module**, with USB and SD-Card ..... **DSM-200 BT**  
for upgrading, for audio transmission from Smartphone, Tablet or PC

Accessories procession system



**UHF handheld microphone**

UHF hand-held microphone, suitable for the procession system WPS-220A. With battery status display and on / off switch with MUTE function for longer pauses in speech. Toll-free fixed frequency.

**UHF handheld mic. .... WPU-100H**



**UHF pocket transmitter**

Bodypack transmitter to use the Headset Microphone HS-400. With battery status indicator and MUTE function. The fixed frequency is in the registration-free area.

**UHF pocket transmitter . WPU-200 B**



**Headset micro**

Lightweight and unobtrusive headset microphone for use with pocket transmitter WPU-200B.

**Headset micro ..... HS-400**



**Neck microphone holder**

Microphone holder for optimal positioning of the handheld microphone WPU-100H. Ideal for long-lasting processions and events.

**Neck microphone holder, without microphone . . . . NMH-100**

**Carrying and storage bag**

Comfortable carrying and storage bag for transport and storage of the procession plant.



**Carrying and storage bag ..... CB-220**  
for WPS-220 A

**Floor stand**

Very stable base Tripod made of aluminium (3.2 kg) for setting up the WPS-220A.

The step less height adjustment allows optimal adaptation to local conditions..

**Floor stand ..... QST-185**  
for WPS-220 A





# Wireless POWER-PHONE

**RCS**<sup>®</sup>  
mobile sound



- Processions
- Propagandism
- Guided Tours, Exhibitions and Fairs
- Sports Events
- Fire Brigade or Clubs and Associations





Registration and Free of charge!

Picture shows WPP-050 U1

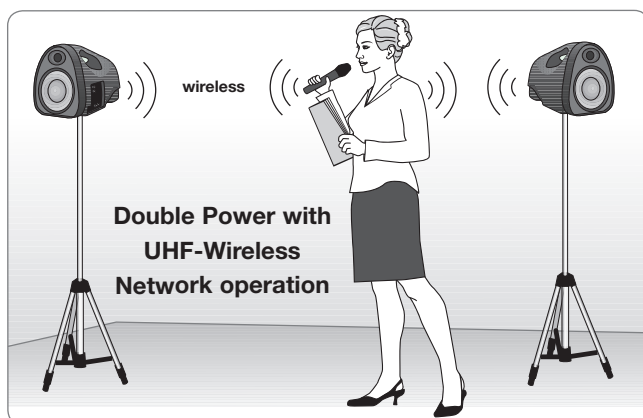
- Very mobile due to small empty weight
- Wireless UHF technology (16 frequencies)
- Long-lasting lead-gel storage-battery
- Parallel operation of multiple devices possible
- In combination with the LST-050, usable as an procession system

### Description

It is possible to expose smaller groups with up to 100 people adequately to supersonic sounding, with this mobile voice transmission system. The small empty weight eases the handling of this device and therefore allows operation during longer lasting events.

The integrated UHF-System promises absolute flexibility and additionally allows the choice between 16 frequencies.

It can be switched to a trouble-free frequency immediately. The UHF-Handmicrophone UH-016B as well as the UHF-Bodypack UB-016 is available as a receiver. The Bodypack can be combined with a Headset- or a Clip-on microphone.



Technical data	WPP-050 U1/U2
Program capacity / RMS	50 W / 30 W
Power AC	230 V (mains supply ~19V); 12 V battery, 2.7Ah
Operating time Battery	approx. 3 hours
Inputs	1 x MIC (wireless), 1x MIC (Jack 6,3 mm), 1 x AUX (Jack 3,5 mm)
Outputs	LINE Out 0dB
Frequency	60 Hz ~ 15.000 KHz
UHF-Receiver System	16 frequencies (863 – 865 MHz); max. 2 Receiver
Tone regulation	single EQ
System/distortion factor	< 0,1%
Speaker	5 1/4", 4 ohms
Case	ABS
Dimensions / Weight	W 160 x H 210 x D 290 mm / 3,3 kg

For the incoming supply of further signals the AUX-input can be used. Offhand music can easily be imported e.g. with a MP3-Stick.

In case the power of a single device should not be sufficient, or the number of people to be exposed to acoustic irradiation cannot be estimated, it is useful to place a second device adequately. Naturally both devices can be addressed via a Hand- or Bodypack transmitter, of course using the same frequency.

\*

### Model designations

- Wireless POWER-PHONE, 50 W** ..... **WPP-050 U1**  
with integrated 1-Channel UHF-Receiver
- Wireless POWER-PHONE, 50 W** ..... **WPP-050 U2**  
with integrated 2-Channel UHF-Receiver
- Replacement Battery, 2.9 Ah (for WPP-050 U1/U2)** ..... **BA-029**



## UHF-Accessories:

### UHF-Hand microphone

Dynamic hand microphone optimized for voice transmission. 16 selectable frequencies are registration free. The battery status indicator continuously informed about the current status. Power is supplied by two Mignon-Batteries (AA) or similar batteries.



**UHF-Hand Microphone, (16 Frequencies)..... UH-016 B**

### UHF-Bodypack (for LA-200B or HS-200)

Bodypack transmitter for using the microphones LA-200B and HS-200. The 16 selectable frequencies are registration free. With battery level indicator and detachable antenna. Power is supplied by two Mignon-Batteries (AA) or similar batteries.



**UHF-Bodypack, (16 Frequencies)..... UB-016 B**

### Lavalier-Microphone

Condenser microphone completed in ball-characteristic, suitable for bodypack UB-016. Delivery includes an 90 cm long connecting cable and a clip.



**Lavalier-Microphone, black..... LA-200 B**

### Headset-Microphon

Very comfortable condenser microphone completed in ball-characteristic, suitable for bodypack UB-016. Cable length approx. 100 cm.



**Neckworn Microphone, skin-color..... HS-200 S**  
**Neckworn Microphone, black..... HS-200 B**

## For Processions and demonstrations:

### Mobile Horn Loaded Compression Drivers



This pair of weather-proof mobile horn loaded compression drivers is specifically constructed for high-quality speech, ideal for the use outside and enables in combination with the Sound-Case great flexibility. An excellent choice for clear speech and music reproduction with a natural clarity.

The stand is extendable up to a height of 1.80 m; the adjustable shoulder strap is removable. By screwing the 3 pins together you will have a stable boom.

The speakers are variable to swivelling and tilting, with the option of unidirectional or opposite direction for acoustic irradiation.



#### Technical data:

Power output 50 W, Weight 3.8 kg, Impedance 4 ohms, frequency range 150 – 15000 Hz.

### Mobile Horn Loaded Compression Drivers

incl. Boom, 50 W ..... **LST-050**

## SERVICE-LST

The model **WPP-050** can be used as a procession system with the **LST-050**.



For this case it is necessary to order the optional **SERVICE-LST** for the Power-Phone. This upgrade contains all required modifications of the devices.

After this, the speaker stand **LST-050** can be connect easy with the delivered cable-set to the portable Power-Phone.

**Service-Upgrade, for WPP-050 U1/U2.....SERVICE-LST**

## POWER-PHONE-Accessories:

### Carriage and Storage Bag



High-quality, weatherproof vinyl fabric bag for carriage, usage and storage of the POWER-PHONE.

### Carriage and Storage Bag

for POWER-PHONE . . . . . **CB-030**

### Dynamic Microphone

with 5 m cable



Great quality dynamic Handmicrophone with kidney characteristics. It does not have back coupling problems and wind- and pop-protection are integrated. A low-noise On- and Off-switch is integrated on the handle

### Dynamic Microphone

Jack-plug, balanced, . . . **DM-201 K**  
with 5m cable and microphone holder

### Floor Stand

This stable floor stand for the POWER-PHONE is made of aluminium and is to be set up.

The stand is made out of aircraft aluminium and weight only 3.2 kg. It is continuously adjustable and enables adaptability for various localities.



### Floor Stand . . . . . **ST-030**

for POWER-PHONE

### Carriage and Storage Bag . . . . . **CB-130**

for up to 2 speaker tripods and 1 mic stand

# SOUND-DESK

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**RCS**<sup>®</sup>  
mobile sound



- Hotels, Schools and Residential Homes
  - Community Centres
  - Clubs and Associations
  - Exhibitions and Trade-Fairs
  - Sporting Events
  - Advertising and Sales Promotion
-



Registration and  
Free of charge!

16 Frequencies!

- **Innovated Design**
- **UHF-Wireless Technology (16 frequencies)**
- **Music & Speech**
- **High Performance Speaker System**

**SOUND-DESK:** This name stands for an innovated lectern with a built-in sound system for perfect presentation. The powerful 60/120 Watt amplifier is aligned to the speaker line-construction inside the base.

It is possible to extend the system with the integrated bridge-technique with further systems, and put acoustic irradiation into practice for every room size.

Please consider the following features:

- Due to its construction the SOUND-DESK is one of the highest performance lecterns on the market.
- The case made of aluminium and ABS presents itself in an attractive and classic design.
- The system comes with a 55 cm gooseneck microphone.
- **DESK-LIGHT (optional):** Integrated battery operated manuscript light for use in dark rooms.
- You can install a maximum of two UHF wireless receivers which have two separate volume controls.
- The built-in battery allows cable-free use for several hours.

- SOUND-DESK**, max. 120 W, black ..... **SD-120**
- SOUND-DESK**, max. 120 W, black ..... **SD-120 U1**  
with built-in 1-channel UHF wireless mic receiver
- SOUND-DESK**, max. 120 W, black ..... **SD-120 U2**  
with built-in 2-channel UHF wireless mic receiver



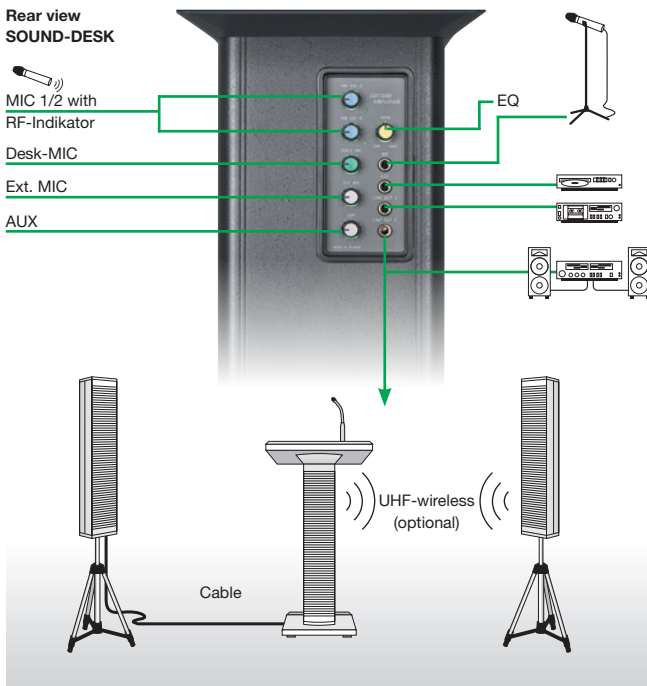
### Additional Active-Speaker

The SR-120 is the speaker sound system to compliment the SOUND-DESK. This active sound system together with the SOUND-DESK enables users to reach an audience of boundless capacities. The Bridge Technology makes it simple to connect the systems.

The impressive construction of the SR-120 ensures high-fidelity. Obviously you can use the UHF technology system to create wireless networks

- Additional Active-Speaker**, max. 120W ..... **SR-120**
- Additional Active-Speaker**, max. 120W ..... **SR-120 U1**  
with built-in 1-channel UHF wireless mic receiver

**Floor Stand for Additional Active-Speaker** ..... **ST-120**



## UHF-Accessories:

### UHF-Hand Microphone

Electret hand microphone, optimized for voice. 16 selectable frequencies in the registration-free area. The battery status indicator informs continuously about the current status. Power is supplied by 2 AA batteries or equivalent batteries.



CE 0681

UHF-Hand Microphone (863-865 MHz) ..... **UH-016 B**

### UHF-Bodypack (for LA-200B or HS-200)

Bodypack transmitter for using the microphones LA-200B and HS-200. 16 selectable frequencies in the registration-free area. With battery level indicator and detachable antenna. Power is supplied by 2 AA batteries or equivalent batteries.



CE 0681

UHF-Bodypack (863-865 MHz) ..... **UB-016 B**

### Lavalier-Microphone

Condenser microphone completed in ball-characteristic. Delivery includes an 90 cm long connecting cable and a clip.



Lavalier-Microphone ..... **LA-200 B**

### Headset-Microphone

Very comfortable condenser microphone completed in ball-characteristic, suitable for bodypack UB-016. The cable length is approx. 100 cm



Headset-Microphone, skin-color ..... **HS-200 S**

Headset-Microphone, black ..... **HS-200 B**

### Dynamic Microphone with 5 m cable



Great quality dynamic Handmicrophone with kidney characteristics. It does not have back coupling problems and wind- and pop-protection are integrated.

### Dynamic Microphone

Jack, unbalanced. .... **DM-202 K** with 5 m cable and Microphone holder

### Venyl-Cover



This heavy duty Vinyl-Cover for storage of the SOUND-DESK with an integrated pocket for accessories.

Venyl-Cover ..... **VC-120** with integrated Accessories bag

This rip-proof, water resistant, vinyl and fabric bag has two inner pockets for up to three stands, a zip closure and carry handles.



Speaker Stand Carrier Bag ..... **CB-130** for up to 2 speaker tripods and 1 mic stand

Connecting Cable, 30 m for additional on Speaker. .... **AC-300**

### Desk-Light

Manuscript light (optional) for the SOUND-DESK. The battery powered energy-saving Desk-Light enables exact adjustment as it has a flexible gooseneck.



Desk-Light ..... **DL-120** Battery operated Desk-Light

### Microphone Stand



Mic Stand ..... **BS-195** With adjustable boom extension (170 cm)



Mic-Holder ..... **MH-800** for Wireless Hand mic



Tabletop Mic Stand ..... **TS-060** With adjustable boom extension (40 cm)

Technical data	SOUND-DESK
Program capacity / RMS	120 W / 60 W
Power	AC 90 V – 260 V, 50/60 Hz, Battery 7,2 Ah
Battery operating time	up to 8 hours
Microphone	high quality 55 cm / gooseneck
Input - MIC	2 x MIC with LED-Indicator for wireless systems
Input - AUX	-10 dBV / 20 kohms
Output	0 dB / 600 ohms
Frequency range/distortion factor	90 Hz ~ 15.000 KHz $\pm$ 3 dB
Tone control	single EQ
Speaker	4 x 30 Watt broadband
UHF-Receiver System	UHF 16 frequencies (863 – 865 MHz)
Case	ALU; ABS
Dimensions / Weight	W 550 x H 1080 x D 432 mm / 21,5 kg

Technical data	Additional Active Speaker (SR-120)
Program capacity / RMS	120 W / 60 W
Power	AC 90 V – 260 V, 50/60 Hz, Battery 7,2 Ah
Battery operating time	up to 8 hours
Input - MIC	2 x MIC with LED-Indicator for wireless system
Input - AUX	-22 dBV / 600 ohms
Output	0 dB / 600 ohms
Output/Input - Bridge	IN -12 dB 50K / OUT -12 dBV 600 K
Speaker	4 x 30 Watt broadband
UHF-Receiver System	UHF 16 frequencies (863 – 865 MHz)
Dimensions / Weight	180 (W) x 940 (L) x 145 mm (D) / 12,8 kg
Battery	7,2 Ah

★

# SOUND-RANGER

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**RCS**<sup>®</sup>  
mobile sound



- Conferences and Training
  - Exhibitions and Trade-Fairs
  - Clubs and Associations
  - Community Centres and Churches
  - Sporting Events
  - Hotels, Schools and Residential Homes
  - Advertising and Sales Promotion
-



- High power max. 120 W system
- Wireless UHF technology (16 frequencies)
- Music and speech
- Absolutely flexible

The portable SOUND-RANGER system offers absolute flexibility and freedom of use without a disturbing cable. The integrated 12 V high-performance battery guarantees the user 8 hours of cable-free use.

This unique speaker construction enables the acoustic irradiation of larger areas. The optional wireless technology of this system is very flexible and makes the use easy.

Please consider the following features:

- The speaker line-construction guarantees an even acoustic irradiation.
- The integrated mixer processes up to four audio sources, whereof max. 2 are wireless receivers.
- This system uses the latest 12 V storage battery technology.

★

### Model designations

- SOUND-RANGER**, max. 120 W, black ..... **SR-120**
- SOUND-RANGER**, max. 120 W, black ..... **SR-120 U1**  
with built-in 1 channel UHF wireless mic receiver
- SOUND-RANGER**, max. 120 W, black ..... **SR-120 U2**  
with built-in 2 channel UHF wireless mic receiver

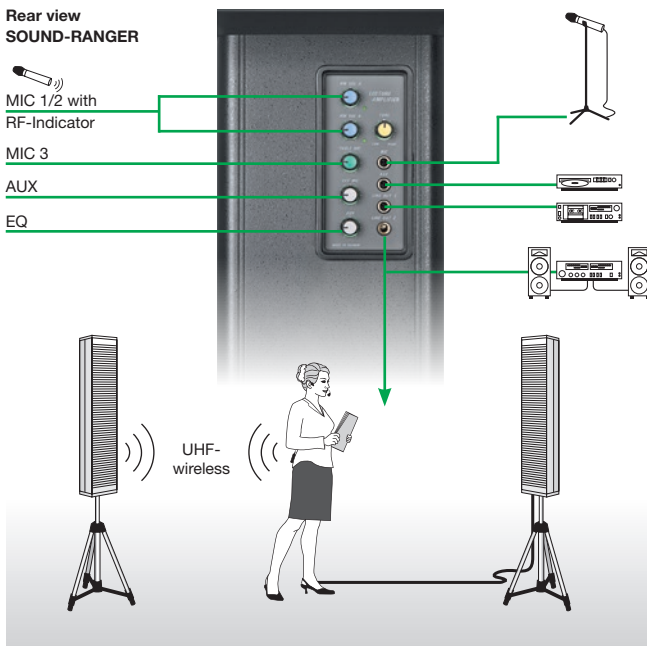
Registration and  
Free of charge!

16 Frequencies!



★

Technical data	SOUND-RANGER
Program capacity / RMS	120 W / 60 W
Power	AC 90 V – 260 V, 50/60 Hz, battery 7,2 Ah
Battery operating time	up to 8 hours
Input - MIC	2 x MIC with LED-Indicator for wireless systems
Input - AUX	-22 dBV / 600 ohms
Output	0 dB / 600 ohms
Output/Input - Bridge	IN +12 dB 50K / OUT +12 dBV 600 K
Frequency range	90 Hz ~ 15.000 KHz ±3 dB
Distortion factor	single EQ
Tone control	4 x 30 Watt broadband
UHF-Receiver System	UHF 16 frequencies (863 – 865 MHz)
Case	ALU; ABS
Dimensions / Weight	W 180 x H 940 x D 145 mm / 12,8 kg



## UHF-Accessories:

### UHF-Hand Microphone

Electret hand microphone, optimized for voice. 16 selectable frequencies in the registration-free area. The battery status indicator informs continuously about the current status. Power is supplied by 2 AA batteries or equivalent batteries.



CE 0681

**UHF-Hand Microphone** (863-865 MHz) ..... **UH-016B**

### UHF-Bodypack (for LA-200B or HS-200)

Bodypack transmitter for using the microphones LA-200B and HS-200. 16 selectable frequencies in the registration-free area. With battery level indicator and detachable antenna. Power is supplied by 2 AA batteries or equivalent batteries.



CE 0681

**UHF-Bodypack** (863-865 MHz) ..... **UB-016B**

### Lavalier-Microphone

Condenser microphone completed in ball-characteristic. Delivery includes an 90 cm long connecting cable and a clip.



**Lavalier-Microphone** ..... **LA-200B**

### Headset-Microphone

Very comfortable condenser microphone completed in ball-characteristic, suitable for bodypack UB-016. The cable length is approx. 100 cm



**Headset-Microphone, skin-color** ..... **HS-200S**

**Headset-Microphone, black** ..... **HS-200B**

## SOUND-RANGER-Accessories

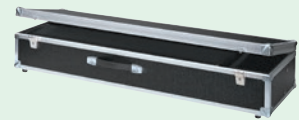
### Carriage and Storage Cover



High-quality, weatherproof vinyl fabric cover for carriage, while use and storage of the SOUND-RANGER.

### Carriage and Storage Cover

### Carriage and Storage Case



This lockable, sturdy case is made of alu composites, has a foam cut interior and additional space for floor stand ST-120 and accessories.

### Carriage and Storage Case

for SOUND-RANGER ..... **VK-120**

### Speaker Stand Carrier Bag

This rip-proof, water resistant, vinyl and fabric bag has two inner pockets for up to three stands, a zip closure and carry handles.



**Speaker Stand Carrier Bag** ..... **CB-130**

for up to 2 speaker tripods and 1 mic stand

**Connecting cable, 30 m** for additional SOUND-RANGER .. **AC-300**

### Floor Stands

Both are continuously adjustable and enables an adaptability for various localities.

The QST-120 can be adjusted from 109 to 185 cm height and the ST-120 from 65 to 90 cm.



**Floor Stand** ..... **QST-120**  
for SOUND-RANGER or additional SOUND-RANGER

**Floor Stand** ..... **ST-120**  
for SOUND-RANGER or additional SOUND-RANGER

## SOUND-RANGER-Accessories:

### Dynamic Microphone with 5 m cable



Great quality dynamic Hand-microphone with kidney characteristics. It does not have back coupling problems and wind- and pop-protection are integrated. A low-noise On- and Off-switch is integrated on the handle.

**Dynamic Microphone** ..... **DM-202 K**  
 jack-plug (bal.), with 5m cable and microphone holder (3/8" and 5/16")

### Microphone Stand



**Mic Stand** ..... **BS-195**  
 With adjustable boom extension (170 cm)



**Mic.-Holder** ..... **MH-800**  
 for Wireless Hand mic



**Tabletop  
 Mic Stand** ..... **TS-060**  
 With adjustable boom extension (40 cm)

# POWER-MEGAPHONE

---

**RCS**<sup>®</sup>  
mobile sound



**40**  
Max. Watt

- Big Events and Guided Tours ■
- Building Sites, Traffic Control ■
- Advertising and Miscellaneous Events ■
- Red Cross, Police, Fire Brigade, Security ■
- Schools, Sports Events and Swimming Halls ■

# MEGAPHONE



**Hand Megaphone**  
max. 12 W

Siren signal optional:

Weight 1 kg    Battery

### Description

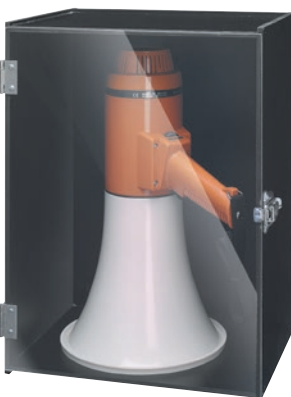
Very handy transistor-megaphone with a bundled, impact and scratch resistant horn (ABS). The megaphone is feedback reduced, speech button and volume control are easy to handle. The model HM-012S has an additional alert siren curve (repeat).

Please consider the following features:

- Pistol grip with carrier strap
- **Siren signal** switchable

Technical data	HM-012/S
Output rate	max. 12 W
Power	8 Mignoncells (UM-3)
Battery lifetime	normal use up to 6 hours
Reach	outdoors up to 500 m
Dimensions/Weight	Ø 190 mm, L 315 mm; 1.0 kg
Colour and Material	fire brigade red; ABS

<b>Hand Megaphone</b> .....	<b>HM-012</b>
<b>Hand Megaphone with Siren</b> .....	<b>HM-012S</b>



### Storage box

This practical storage box for wall mounting is outstandingly suitable for the safe placement of the megaphones M-012/S, HM-025/S and SM-025/S.

The sturdy box is manufactured from high-quality multiplex wood and has additionally a transparent door consisting of plexiglass. The door can be locked by the attached hinge with a lock or a seal.

Please consider the following features:

- Sturdy housing made of 7 mm strong multiplex wood
- Mounting possible at every wall
- Improves the safety, as the megaphones which serve particularly as a signaler in public utilities, are easily accessible in case of an emergency

★

**Storage box.** (W 300 x H 400 x D 220 mm) approx. 2,5 kg ..... **ABB-400**

# MEGAPHONE



Hand megaphone  
max. 25 W



Weight 1,1 kg Battery IPX4

**Description**

The unique water-protected hand megaphones (WHM-series) are designed for security firms and fire brigades. Especially made for the robust employment in water sports and ideal for the use on boats.

The clear speech comprehensibility, the water resistance and the the high-quality housing make this megaphones indispensable. The transparent horn increases the field of view. Both models are very handy, extreme lightly and easy to handle.

- The model WHM-025S has an additional alert siren curve (repeat)
- Protection type **IPX4 compliant to IEC 60529**
- Feedback reduced by optimized directivity

Technical data	WHM-025/S
Output rate	max. 25 W
Power	6 Babycells Typ C (UM-2)
Battery lifetime	normal use up to 6 hours
Reach	outdoors up to 1000 m
Protection type IEC 60529	degree 4 (IPX4)
Dimenstions/Weight	Ø 208 mm, length 320 mm; 1,1 kg
Colour and Material	WHM-025: light blue, WHM-025S: red; ASA-plastic

★

- Hand Megaphone, light blue ..... **WHM-025**
- Hand Megaphone, red with siren signal ... **WHM-025S**



**Storage box**

This practical storage box for wall mounting is outstandingly suitable for the safe placement of the megaphones WHM-025 and WHM-025S.

The sturdy box is manufactured from high-quality multiplex wood and has additionally a transparent door consisting of plexiglass. The door can be locked by the attached hinge with a lock or a seal.

Please consider the following features:

- Sturdy housing made of 7 mm strong multiplex wood, for dust and dirt protection
- Mounting possible at every wall or to set up simply
- Improves the safety, as the megaphones which serve particularly as a signaler in public utilities, are easily accessible in case of an emergency

★

Storage box, (W 300 x H 400 x D 220 mm) approx. 2,5 kg ..... **ABB-400**

# MEGAPHONE

### Hand Megaphone max. 25 W

siren signal  
optional: 



Hand Megaphone ..... **HM-025**  
 Hand Megaphone with siren signal ..... **HM-025S**

### Description

Powerful transistor-megaphone with a bundled, impact and scratch resistant horn (ABS).

The directional of the built-in microphone makes feedback nearly impossible. Speech button and volume control are easy to handle.

The megaphone is ideal for the use at events, in swimming halls and on building sites.

Please consider the following features::

- Easy handling
- Pistol grip with carrier strap

Technical data	HM-025/S
Output rate	max. 25 W
Power	6 Babycells (UM-2)
Battery lifetime	normal use up to 8 hours
Reach	outdoors up to 1.000 m
Dimensions/Weight	Ø 211 mm, L 375 mm; 1,6 kg
Colour and Material	pearlwhite-lightbrown with red signal stripe; ABS

### Shoulder Megaphone max. 25 W

siren signal  
optional: 



Shoulder Megaphone ..... **SM-025**  
 Shoulder Megaphone with siren signal ..... **SM-025S**

### Description

Powerful transistor-megaphone with a bundled, impact and scratch resistant horn (ABS).

The directional of the built-in microphone makes feedback nearly impossible. Speech button and volume control are easy to handle.

The megaphone is ideal for the use at events, in swimming halls and on building sites.

Please consider the following features:

- Hand Microphone with fitted helix cable
- Speech shift-lock and volume control on the microphone

Technical data	SM-025/S
Output rate	max. 25 W
Power	6 Babycells (UM-2)
Battery lifetime	normal use up to 8 hours
Reach	outdoors up to 1.000 m
Dimensions/Weight	Ø 211 mm, L 375 mm; 2,4 kg
Colour / Material	pearlwhite-lightbrown with red signal stripe; ABS

# MEGAPHONE

**POWER-Shoulder Megaphone**  
max. 40 W

siren signal  
optional: 



### Also as Hand Megaphone

The removable microphone can also be attached to the rear of the megaphone, where it can be operated. This enables the use as a hand megaphone.



### Description

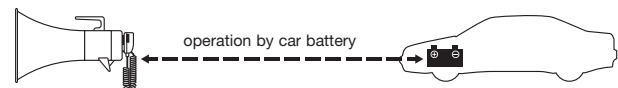
Very stable high-power megaphone with max. 40 W. Especially suitable for security use.

The Microphone has a volume control and a shift-lock speech button. Due to the direction of the Microphone the feedback noise is extremely well suppressed.

The Megaphone has a 12 V connector for power supply or car battery, stand assembly (s. below) is possible.

Please consider the following features:

- Rechargeable use with trickle charge in the megaphone.
- 12 V car adapter in scope of supply



Technical data	SM-040S
Output-rate	max. 40 W
Power	8 Babycells or NiMH rechargeable batteries
Battery lifetime	permanent operation 5 hours
Reach	Outdoors up to 1500 m
Dimensions/Weight	Ø 313 mm, L 435 mm; approx. 2.5 kg (without batteries)
Colour and Materials	ABS, white
Tripod connection	M8 internal screw
Input	12 V power supply & charger socket
Siren signal	curve repeat

**POWER-Shoulder Megaphone with Siren signal**, max. 40 W, for battery- and rechargeable use ..... **SM-040S**  
Delivery: without battery u. charger



This lockable, sturdy case is made of alu composites, has a foam cut interior and room for accessories.

**Carry Case** ..... **MK-040**  
for SM-040S w. accessories



4500 mAh

### Nickel-Metal-Hydride Accu-Kit

This product can be equipped with NiMH-Accus and stay in the megaphone while charging.

**Accu-Set** ..... **NH-040**



### Accu-Charger for NH-040

Special charger for NH-040. Software controlled charging.

**Accu-Charger** ..... **LG-040**

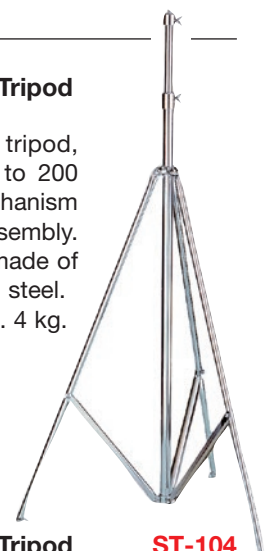
Vinyl fabric bag for storage of the charger LG-040 and the Accu-Kit NH-040.

**Carrier and Storage Bag** ..... **CB-008**  
(no pic.) for LG-040, NH-040, etc.

### Megaphone-Tripod

for SM-040S

Very sturdy tripod, extensible up to 200 cm. Easy mechanism for a quick assembly. The tripod is made of chrome-plated steel. Weight approx. 4 kg.



**Megaphone-Tripod** ..... **ST-104**





WORTH KNOWING ABOUT:  
**PA technology, VAS and RCS®**



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# GENERAL INTRODUCTION INTO THE PA-TECHNOLOGY

The following tips, explanations and illustrations are to approximate and facilitate the planning, configuration and subsequent service of 100V PA systems to you.

As an introduction, we may state in many cases it is the 100V PA technology which makes a commercial acoustic irradiation principally possible, whereas it would be not at all, or only very hard and insufficiently possible, to implement effective systems with low-impedance technology; this being popular first of all as entertainment electronics.

## TYPICAL FIELDS OF APPLICATION FOR 100V PA-TECHNOLOGY:

- Schools and Colleges
- Sports and multipurpose halls
- Open air and indoor baths
- Shopping centers and big stores
- Retail parks and DIY markets
- Logistic centers
- Industrial production buildings
- Public buildings (such as authorities, employment offices and so on)
- Office and administration buildings
- Hotels and restaurants
- Car and fire station
- Buildings which need a voice alarm system or a PA-system

## BASIC FEATURES FOR 100V PA-TECHNOLOGY

Basically a 100V PA-system consists of three parts, which are:

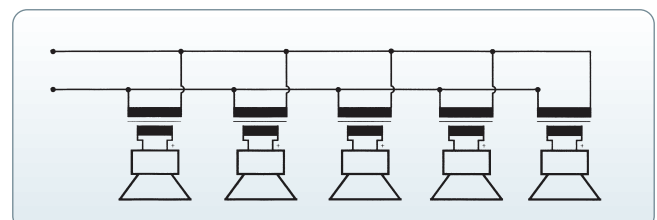
1. **Microphone** or microphone station
2. **PA-system** (consisting of pre-mixer amplifiers, power amplifiers, speaker circuits, power supply)
3. **Speaker**

The advantage of the 100V-technique lies in the wiring of the system.

Due to step up the output voltage to 100V is a thin telephone cable able to brigade large distances without appreciable loss.

With the ungrounded network it is possible to adjust the transformer to the desired volume.

In addition the speakers are not overloaded as in the low-impedance technique. Important is the in-phase connection of all speakers at the lead.



## THE ADVANTAGES OF 100V PA-TECHNOLOGY:

As already mentioned, loudspeakers with so-called 100V sound output transformers are normally being used with 100V PA technology. The output of the amplifier is increased within its sound output transformer to a nominal voltage of 100V.

This 100V AF signal is then distributed through the line network to the single loudspeakers. Next, the sound output transformer within the loudspeaker lowers this AF signal to an appropriate voltage, so that the connected speaker is provided exactly with its designated nominal rating and impedance.

**Big advantages of the 100V PA technology are among other things:**

a) Smooth switching on of the loudspeakers:

100V loudspeakers are simply connected in parallel, regardless of their power input and impedance. However, the total power of all connected loudspeakers must not exceed the nominal rating of the corresponding amplifier. Otherwise the amplifier will be out of order after a while.

b) Bigger circuit lengths possible:

Because of the higher voltage transmitted with 100V PA technology (compared to the low impedance technology used in consumer electronics), the losses within the line network are comparatively small.

The 100V PA technology makes it possible to run very long lines, even with a comparatively small wire diameter, e.g. 2 x 0.75 mm.

c) Small wire diameter sufficient:

With 100V technology, less power is lost in the line network than usually with the conventional architecture of consumer electronics or even "professional sound". Therefore, a smaller wire diameter is sufficient even for demanding 100V PA installations.

Normally cable types IYSt 2 x 0.75 or similar are used. As the case arises, details should be discussed with an expert.

However, it can be said basically that speaker line lengths of 500m and more are trouble-free for 100V technology.

\*

## TECHNICAL TERMS OF 100V PA-TECHNOLOGY:

### 1. Amplifier connection and sound output transformers

PA amplifiers normally operate with the so-called 100V technology. This technology presents a number of advantages, especially for longer circuits.

Through the 100V technology an increase of the amplifier's output power on the speaker outputs is achieved. This leads to a lower current flow at equal power and therefore smaller power losses. Besides, it is not necessarily required to use heavy

cables with large conductor diameters for long circuits, which is yet another advantage.

All loudspeakers can be connected in parallel, as long as the amplifier is not overloaded. Regarding the impedance on the output side, the amount of loudspeakers used is irrelevant.

Because the 100V-transformers installed in the loudspeakers are usually equipped with 3 or more power taps, every speaker can be operated with the desired or adequate power. However, the sum of the connected wattage (of the loudspeakers' transmitters) must not or only insignificantly exceed the output power of the amplifier.

### 2. Single call

With appropriate activation and respectively the amplifier's relevant configuration, a single call can be made with a desktop microphone if necessary.

Generally, this single call can be activated either by a desktop microphone or directly by the PA center.

### 3. Group call

Group call stands for an announcement for a previously determined number or arrangement of loudspeakers or speaker zones. For this purpose, suitable group call buttons have to be available on the PA center and the microphone station.

### 4. All-call

All-call normally means that the relevant announcement is transmitted to all connected loudspeakers and speaker zones.

This kind of call is required for chime and especially alarm transmissions.

### 5. Priority override

The possibility of priority override is essential in the security sector.

In addition to the for this purpose necessary features of the PA center, the connected loudspeakers and respectively their volume controls need to have a built-in emergency call relay. That way, the privileged priority announcement can be, as the name implies, freely transmitted. This has to be considered especially for loudspeakers with a built-in volume control.

### 6. Priority control

In this case one or, if necessary, several announcement or other signals are switched to one or different priorities in the PA center.

These important signals, e.g. alarm calls or the like, are then transmitted with priority and in the meantime fade out or at least weaken secondary signals (e.g. background music, etc.). After completion of the priority signal, the faded or weakened signal is activated again.

### 7. Chime

The sound of a short chime signal (1- or 2-tone chime) arouses the public's (e.g. in supermarkets, etc.) attention for the upcoming announcement. A final chime following the announcement is possible, as far as provided by the PA center. However, this is not common and required.

### 8. Program transmission

With the help of a programme selector on the PA center, a sound signal (e.g. tuner, cassette recorder, CD player,

speaker microphone, etc.) can be transmitted to individual loudspeakers or speaker zones. It is also possible to control these programmes by a microphone station, provided the station is equipped appropriately.

For PA centers with combined speaker zones and different transmission programmes, the switching has to be carried out by adequate switching elements (matrix) analogically or digitally.

### 9. Pilot tone monitoring

The highest strain on the PA center's power amplifiers is during alarm transmissions.

In order to achieve additional security for the PA center's alert, it is often of advantage to monitor the functioning of the power amplifiers with a pilot tone system (generator and decoder with automatic switching).

In case of a fault, the system switches fully automatically to an additional power amplifier (backup amplifier). This backup amplifier then takes over the place of the dropped out amplifier until a service technician has repaired the damage.

★

## SPEAKERS OF 100V PA-TECHNOLOGY:

It is not possible within the limits of these "tips and clues for 100V PA technology" to present all relevant information and explanations.

However, we may illustrate and make understandable many important points and problems occurring with the installation of 100V PA systems.

### 1. Arrangement of speakers

When planning a PA system, it is the main aim to achieve a consistent acoustic irradiation and understandability within the room or area to be provided.

The loudspeakers should be installed in equal intervals in order to avoid areas with unpleasantly high loudness. Most of the commonly used cone speakers show an angle of beam spread of 90° at the -6 dB points in the medium frequency range. Taking this fact into consideration, the loudspeakers can be arranged in such a way that the listener will always stay in the range of at least one speaker.

As far as outdoor systems are concerned, sometimes neighbouring areas are also irradiated acoustically, which is often felt as an annoyance. By using reflex horn speakers and their accurate positioning and orientation, such disturbances can be avoided or at least minimized.

Horn speakers usually radiate within an angle of 30° in the medium frequency range, whereby it is possible to obtain the wanted directivity.

### 2. Nominal load capacity

The nominal load capacity of a loudspeaker is the power a

speaker can carry without noticeable distortions or damage to the system.

The power output of a loudspeaker (in W) is only conditionally suited for judging its achievable volume, the more so as in many cases - caused by the "power and watts mania" in consumer electronics - partly unreliable work is done.

Thus, the indication of the sound pressure in dB at 1W/1m is much more honest and meaningful, especially if also the loudspeaker's frequency range is incorporated in the judgment of its quality. However, here the adjustment of the single parameters is very important, too, as e.g. a very high sound pressure alone does not reveal very much.

### 3. Sound pressure

Sound pressure is typically specified in -dB at 1 kHz and for a power supply of 1 W at 1m distance from the sound source.

Exact information on a speaker system's quality can only be given by means of a measuring diagram (course of the sound pressure over the complete frequency range).

By the way, the sound pressure of 100V loudspeakers normally is considerably higher than of Hi-Fi loudspeakers:

- › Hi-Fi loudspeaker approx. 85-90 -dB at 1W/1m
- › 100V loudspeaker approx. 90-100 -dB at 1W/1m.

### 4. Crosstalk effect

If several speaker lines are carried by one single cable, the danger arises that the signal of one line is transferred capacitively to another.

It may occur by this means, that a loudspeaker, not at all addressed, suddenly and quietly transfers an external calling signal. As far as systems with several programs are concerned, even different programs may be transmitted to the same speaker.

As this effect depends on the cable type used, as well as on the line's length and on the supplied power, a solution of the problem should be discussed with an expert.

Please note: For each signal, one pair of wires, belonging together and stranded with each other, should be used.

### 5. Impedance tester

The digital impedance tester allows you to measure and control the impedances of speaker lines.

The measurement is carried out by a 1 kHz test generator and is displayed on a 4-digit LCD display. For measurements there are three different measuring ranges available: 0-20 ohms, 200 ohms and 2000 ohms.

Such an impedance tester is indispensable for every company dealing with 100V PA technology.

★

## SOUND PRESSURE LEVEL OF SPEAKERS

### SOUND PRESSURE LEVEL INCREASING:

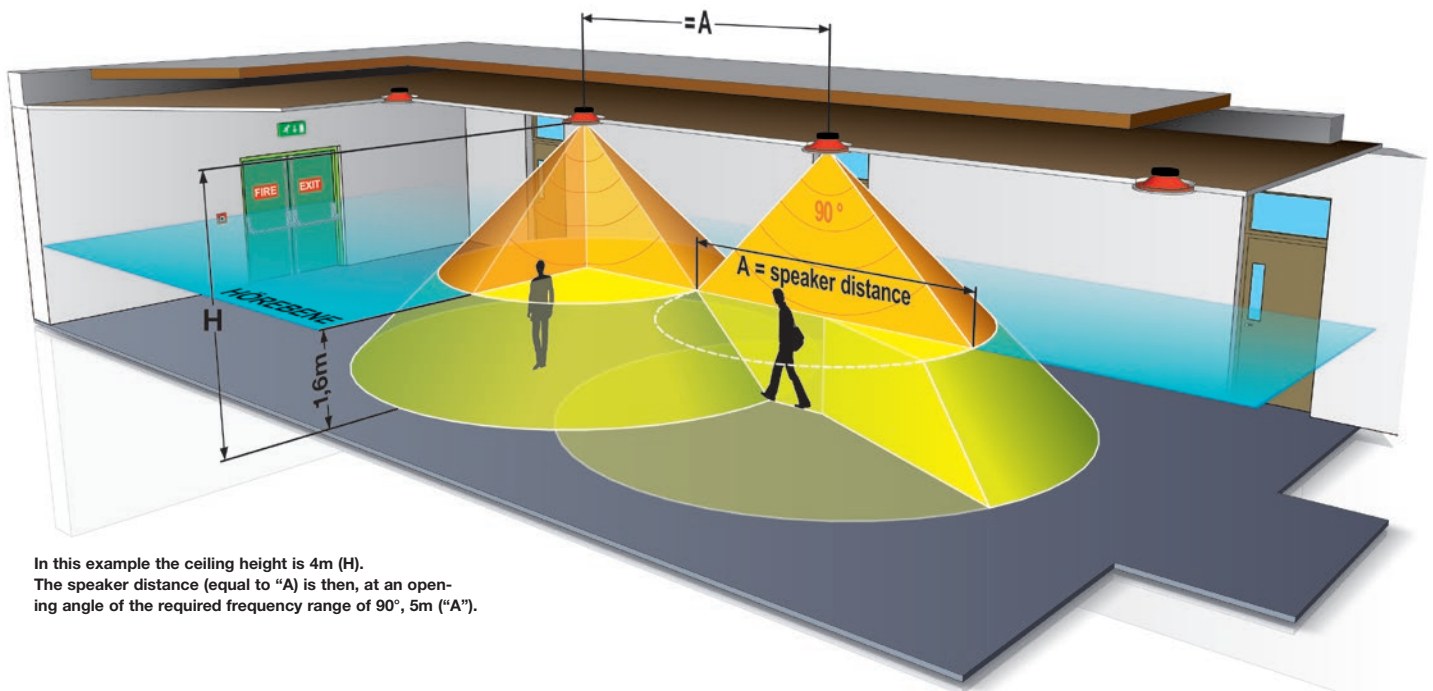
Sound pressure level increasing applied to curved 1W.

Watt:	1	2	4	6	8	10	16	25	32	50	64	75
dB:	0	3	6	8	9	10	12	14	15	17	18	19

### SOUND PRESSURE LEVEL APPROVAL:

Sound pressure level approval applied to curved 1W.

Meter:	1	2	3	4	6	8	10	16	25	32	64
dB:	0	6	10	12	16	18	20	24	28	30	36



In this example the ceiling height is 4m (H).  
The speaker distance (equal to "A") is then, at an opening angle of the required frequency range of 90°, 5m ("A").

## DECENTRALIZED ACOUSTIC WITH CEILING SPEAKERS

(for voice alarming and background public address systems)

Distribution of speaker systems with low power at regular intervals over the complete area. The distance between each speaker can be selected in the following schedule:

**Sound pressure level approval and speaker distance decrease as a function of ceiling height:**

H/m	2,5	3	3,5	4	4,5	5	5,5	6
dB	0	3,5	6	8	9,5	11	12	13
A1/m	1,2	1,8	2,4	2,9	3,5	4,1	4,7	5,2
A2/m	2	3	4	5	6	7	8	9
A3/m	3,4	5,5	7	9	10,5	12	14	16

H Ceiling height or distance of a loudspeaker mounted or suspended from the floor.

A1 Speaker distance for high intelligibility for voice alarm systems (also for critical facilities).

A2 Speaker distance for well intelligibility for voice alarm systems or paging systems (also for uncritical facilities).

A3 Maximum possible speaker distance only for background irritation.

**For ceiling heights greater than 6m this public address system is not applicable** because in the working area (sound zone about 1,6m above the ground) there is too much more diffuse sound.

## INSTALLATION GUIDELINES FOR PA-CABLE NETWORK IN SCHOOLS, SPORTS HALL AND INDUSTRY

### 1. MICROPHONE LINE:

#### 1.1 Conduit wiring:

The microphone cables are in a separate complete steel tank piping freight collect. The steel conduits are embarrassed if possible at 1m distance from power lines (230V) but at least 30 cm in distance. The steel conduits are generally on one side to close up.

#### 1.2 Cabling Material (minimum requirement):

##### a) Single pair cable:

- Paired-twisted cables (even shock of 8mm) or cross screen.
- Paired in a spiral or braided shield with a cover of at least 80% such as NF1001 or MY101.

##### b) Multipair cable:

- Fitting as in point a .
- Shields of the pairs are against each other isolated. Common shielding over wickerwork (cover at least 80%).
- Color Code of the couples according to DIN 47100.

#### 1.3 Junction and Terminal Box:

The steel conduits are to lead inside of the boxes and connect. For the required distance from disturbing effects applies the same as in point 1.1 conduit wiring Distribution of metal must be grounded properly.

The connections must be made professionally by soldering Important: short dispose of the screens and in-phase connection of the lines.

#### 1.4 Plug Connection:

As a microphone connector are XLR connectors made of Switchcraft, Cannon or Neutrix fielding (DIN 15905). The modulation part (microphone-user) is due pins and sockets to lead.

Pins and Sockets configuration:    1= Shield  
    2= a-wire  
    3= b-wire

Additional can be used jacks according to DIN 41622 for example 40-pin multipin jacks.

### 2. SPEAKER LINES (BALANCED UNGROUNDED)

#### 2.1 Conduit wiring:

As ductwork network for speaker cables can be used plastic pipes or cable ducts. The minimum distance of the 230V power line shall be not less than 30cm. Should not the minimum distance must be ensured steel conduit must be laid.

#### 2.2 Cabling material:

As speaker line is only a steady twisted cable allowed to use. The cross section is determined in accordance with the

power to be transferred by calculation.

#### 2.3 Junction and Terminal Box:

For speaker lines can be used plastic boxes. In busy areas must be used them in impact proof distributors. The internal connections are to be produced professionally by soldering or clamping.

#### 2.4 Plug connection for low impedance technology:

As speaker plug connection for low impedance systems are exclusively Speakon connectors are used. These connectors are locked and they have the following pin allocation:

Standard pin allocation:            1+ = a-wire (modulation)  
    2- = b-wire (modulation)  
    2+ = free  
    2- = free

The two free pins can be used in active sound systems for special applications or other modulations.

#### 2.5 Connectors for 100V connection:

For use with 100V systems XLR connectors are standard fair use Fin 4-pin version. The live part (amplifier-speaker) is basically to lead to consumers on pins and sockets.

Standard pin allocation:            1 = a-wire (modulation)  
    4 = b-wire (modulation)  
    2 = free  
    3 = free

### 3. CONTROL LINE:

#### 3.1 Pipelaying :

The control lines are to be collected in separate plastic pipes or cable channels. Concerning to parasitic errors there are no restriction whatsoever.

#### 3.2 Cabling material:

The following cables can be used:

**Telecommun. cable: IY (ST) Y 2x2x0, 8 to 50x2x0, 8**

The insert can be a speaker wire, a control line or a signal for the slave clock.

★

## MINIMUM STANDARDS FOR CABLE AND LINES

IN PA SYSTEMS, EMERGENCY-WARNING SYSTEMS (EWS) AND VOICE ALARM SYSTEMS (VAS)

### LINES TO 100 VOLT SPEAKERS

Designation	In the respective fire section, until 1st speaker	From speaker to speaker in the same fire section
PA	not applicable	J-Y(st)-Y 2 x 2 x 0,8 mm <sup>2</sup>
EWS	JE-H (st)-H 2 x 2 x 0,8 mm <sup>2</sup>	J-Y(st)-Y 2 x 2 x 0,8 mm <sup>2</sup>
VAS	JE-H (st)-H 2 x 2 x 0,8 mm <sup>2</sup>	J-Y(st)-Y 2 x 2 x 0,8 mm <sup>2</sup>

### LINES TO LOW IMPEDANCE SPEAKERS

Designation	Up to 50 m cable length	From 50 m cable length
Up to 300 Watts of power	RLK-225 (2 x 2,5 mm <sup>2</sup> )	RLK-240 (2 x 4 mm <sup>2</sup> )
Up to 300 Watts of power	RLK-240 (2 x 4 mm <sup>2</sup> )	RLK-260 (2 x 6 mm <sup>2</sup> )

### LINES TO THE FIRE ALARM CONTROL PANEL (FACP/BMA) IN VAS OR MANUAL CALL POINTS AT EWS

Designation	In the respective fire section, until 1st speaker	From speaker to speaker in the same fire section
PA	not applicable	
EWS	JE-H (st)-H X x 2 x 0,8 mm <sup>2</sup> - X depending on the number of detectors	
VAS	JE-H (st)-H X x 2 x 0,8 mm <sup>2</sup> - X in dependence on the number of the contacts	

### LINES TO THE FAULT WARNING CENTRAL OR BUILDING CONTROL SYSTEMS

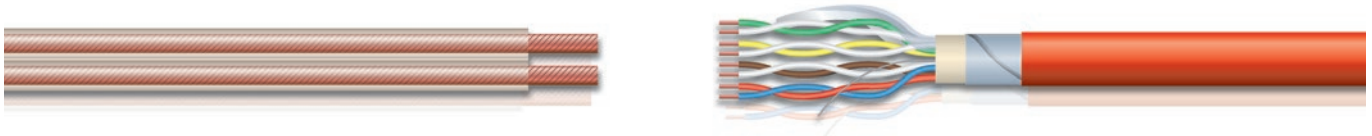
Designation	Connection line
PA	not applicable
EWS	JE-H (st)-H 2 x 2 x 0,8 mm <sup>2</sup>
VAS	JE-H (st)-H 2 x 2 x 0,8 mm <sup>2</sup>

### LINES TO STROBE LIGHTS ON VAS (EN 54-23) OR EWS

Designation	Connection line
PA	not applicable
EWS	JE-H (st)-H 2 x 2 x 0,8 mm <sup>2</sup> or J-Y(st)-Y 2 x 2 x 0,8 mm <sup>2</sup> (RED)
VAS	JE-H (st)-H 2 x 2 x 0,8 mm <sup>2</sup>

### LINES FOR FIRE MICROPHONE OR FIRE BRIGADE MICROPHONE STATION

Designation	Fire brigade mic. station PFM-330 D	Fire microphone (e.g. ESM-020 H)
PA	not applicable	not applicable
EWS	JE-H (st)-H 4 x 2 x 0,8 mm <sup>2</sup>	JE-H (st)-H 2 x 2 x 0,8 mm <sup>2</sup>
VAS	JE-H (st)-H 4 x 2 x 0,8 mm <sup>2</sup>	JE-H (st)-H 2 x 2 x 0,8 mm <sup>2</sup>



## LINES TO BUS MICROPHONE STATIONS (DIGITAL), RADIO RECEIVERS, DIGITAL BUS DEVICES

Designation	Line	Alternative line (if possible)
PDM-208 B	CAT 6 / Cat 7 AWG 23	J-Y(st)-Y 4 x 2 x 0,8 mm <sup>2</sup>
PTM-101 B	CAT 6 / Cat 7 AWG 23	J-Y(st)-Y 4 x 2 x 0,8 mm <sup>2</sup>
VLM-100	CAT 6 / Cat 7 AWG 23	J-Y(st)-Y 4 x 2 x 0,8 mm <sup>2</sup>
ELM-106/VLM-106/MXM-104	CAT 6 / Cat 7 AWG 23	J-Y(st)-Y 4 x 2 x 0,8 mm <sup>2</sup>
ELE-004	J-Y(st)-Y 4 x 2 x 0,8 mm <sup>2</sup>	JE-H(st)-Y 4 x 2 x 0,8 mm <sup>2</sup>
DCF-Receiver PRR-077 B	CAT 6 / Cat 7 AWG 23	J-Y(st)-Y 4 x 2 x 0,8 mm <sup>2</sup>
DCF-Receiver DCF-077	J-Y(st)-Y 2 x 2 x 0,8 mm <sup>2</sup>	–

## POWER SUPPLY (DEPENDING ON THE REQUIRED POWER CIRCUITS)

Designation	Line	Fuse Type
Each <b>NEM-230 A</b>	NYM-J 5 x 2,5 mm <sup>2</sup>	3 C 16
Each <b>DPD-5622</b>	NYM-J 3 x 2,5 mm <sup>2</sup>	1 C 16

## LINES FOR INDUCTION LOOPS LINE (HEARING IMPAIRED ASSETS)

Designation	Up to 50 m cable length	From 50 m cable length
Small loops	ISL-25 (1 x 2,5 mm <sup>2</sup> )	ISL-04 (1 x 4 mm <sup>2</sup> )
Large loops	ISL-04 (1 x 4 mm <sup>2</sup> )	ISL-06 (1 x 6 mm <sup>2</sup> )

**Note:** When installing from the current controlled loop systems (with induction transformer), make sure that the cables are laid separately immediately after the transformer from each other and are not parallel. Otherwise, the inductive effect cancels and therefore the induction loop does not work.

In voltage controlled loop systems (with induction amplifiers such as ILD-1000 G) should the lines run stranded and diverge only at the point of the loop.

## CABLE SPECIFICATIONS ACCORDING TO VDE 0833 PART 4

Line type	J-Y(st)-Y X x 2 x 0,8 mm <sup>2</sup>	J-EH(st)-Y X x 2 x 0,8 mm <sup>2</sup>
Core identification code	According to VDE 0815 part 10	According to VDE 0815 part 10
Certification	VDE 0815	VDE 0815
Coupling	(800Hz): K1: 80% > 300pF/100m	K1: >300pF/100m; K9-12: >100pF/100 m
Loop resistance	max. 73,2 ohms/km	max. 73,2 ohms/km
Damping	max. 1,1 dB/km	–

**Note:** Please note when laying the installation instructions of the cable manufacturer.

## LINES FOR MICROPHON AUDIO CABLES

Designation	Line
Symmetrical cable	ACM-222 (2 x 0,22 mm <sup>2</sup> ) - twisted pair, with braided shield
Double symmetrical cable	ACM-422 (2 x 2 x 0,22 mm <sup>2</sup> ) - double twisted pair, with braided shield

## PROTECTION TYPE ACCORDING TO DIN 40050 AND IEC 144

The **DIN 40050** deals with the protection of electrical equipment by enclosures and covers and includes:

1. Protection of persons against contact with live parts within a building, as well as the protection of equipment against ingress of foreign bodies.
2. Protection of equipment against ingress of water (water protection).
3. Shortcuts for the international protection types.

### IP= Shortcut for „international protection“:

The protection may be indicated by a sign, which is composed of the two always constant letter IP and two digits for the degree of protection.

### Samples for the declaration:

Identification letter: **IP**  
 First code number: **4**  
 Second code number: **4**

### TOUCH GUARD & FOREIGN BODY PROTECTION:

1st code number	Scope	Destination statement
<b>0</b>	No Protection	No special protection of persons against accidental contact with live or moving parts. No protection of equipment against ingress of solid foreign bodies.
<b>1</b>	Protection against large foreign body	Protection against accidental contact with live and moving parts inside. (hand, but no protection against deliberate access to these parts). Protection against ingress of solid foreign bodies with a diameter larger than 50mm.
<b>2</b>	Protection against medium sized foreign body	Protection against finger contact with live or internal moving parts. Protection to the ingress of solid foreign bodies with a diameter larger than 12mm.
<b>3</b>	Protection against small foreign body	Protection against contact with live internal moving parts with tools, wires or similar object with a thickness greater than 2,5mm. Protection against ingress of solid foreign bodies with a larger diameter greater than 2,5mm.
<b>4</b>	Protection against solid foreign objects	Protection against contact with live or internal moving parts with tools, wires or similar object with a thickness greater than 1mm. Protection against ingress of solid foreign bodies with a diameter greater than 1mm.
<b>5</b>	Protection against dust deposits	Complete protection against contact with live or internal moving parts. Protection against dust deposits. The penetration of dust is not completely prevented but dust must not penetrate in such quantities that the operation will be affected.
<b>6</b>	Protection against dust	Complete protections against contact with live or dust entering internal moving parts. Protection against ingress of dust.

### WATER PROTECTION:

2nd code number	Scope	Destination statement
<b>0</b>	No protection	No special protection
<b>1</b>	Protection against vertically falling drops of water	Protection against water drops falling vertically must not have any harmful effect.
<b>2</b>	Protection against diagonally falling drops of water	Water drops are falling at any angle of 15° from vertical shall have no harmful effect.
<b>3</b>	Protection against spraying water	The water in any desired angle up to 60° from vertical drops shall have no harmful effect.
<b>4</b>	Protection against splashing water	Water splashed from any direction against the equipment shall have no harmful effect.
<b>5</b>	Protection against water jets	Water jets from a nozzle that is directed from all directions against the equipment shall have no harmful effect
<b>6</b>	Protection against flood	Water allowed temporary flooding as penetrate through heavy seas not in harmful quantities into the equipment. *
<b>7</b>	Protection against immersion	Water may not penetrate in harmful quantities when the equipment is submerged below the specified pressure and time conditions in water. *
<b>8</b>	Protection against submersion	Water may not penetrate in harmful quantities when the equipment is submerged under a fixed pressure for an indefinite time under water. *

\* In certain equipment may not enter the water. This is necessary in the result sheet for the equipment.



# LIFE SAVING VOICE EVACUATION

**EWS:** ✓

Emergency Warning  
Systems

**VAS:** ✓

Voice Alarm  
Systems

**NGRS:** ✓

Emergency and Danger  
Reaction Systems

**AMOK:** ✓

Systems for Warning  
in Amok Situations

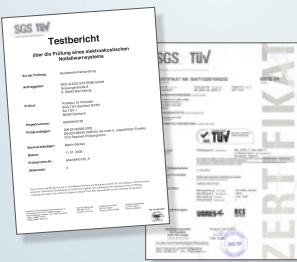
### THE ADVANTAGES OF VOICE EVACUATION

**A Life saver in any case of an emergency!**

An electroacoustic evacuation system is crucial to deliver clear alarm messages and avoid panicking. This ensures a much quicker and safer evacuation of a building than with sirens or bells.

Of course this security system has to be functional at all times. Requirements for functionality and monitoring of evacuation systems are therefore defined in the European norm **IEC 60849**.

### MAIN FEATURES OF THE RCS SOLUTION



- EN 54-4 / EN 54-16 / EN 54-24 / IEC 60849 (all certified)
- According to VDE-0833-4
- Expandable in steps of 8 paging zones to a maximum of 224 zones
- Configuration via PC based software
- Backup of all configuration and setup data
- Up to 24 desktop call stations can be connected
- Speaker lines can be assigned freely to any zone
- Training courses by RCS for your staff

### OPERATIONAL AREA – ANY POPULATED ENVIRONMENT

- Office and industrial premises
- Hotels, shopping malls
- Educational institutions like schools, universities etc.
- Sports arenas and gyms
- Stations, hospitals
- Theatres, museums, cinemas
- Theme parks and recreation centres
- Indoor and outdoor swimming pools

# EFFECTIVE ALARMING FOR A QUICK EVACUATION

**? Screaming sirens should warn us from danger. But – what danger? What are we to do, what is the danger actually?**

Countless case studies and laboratory experiments have proven that people only react immediately and correctly to an alarm if enough information is provided about the reason and the seriousness of the alarm. Especially for persons who are in an unfamiliar environment clear and unmistakable instructions about what to do can and will be life-saving. If this vital information is missing, for example

**»The unexcitedly spoken message of a voice evacuation (VAS) system communicates the need for action clearly.«**

because they only hear a siren tone instead of a spoken warning message, people will most likely react in an unfavourable manner or even ignore the alarm completely.

Not open fire is the greatest hazard in a building, but smoke and toxic gases. Therefore most casualties occur during the early phase of a fire, during the

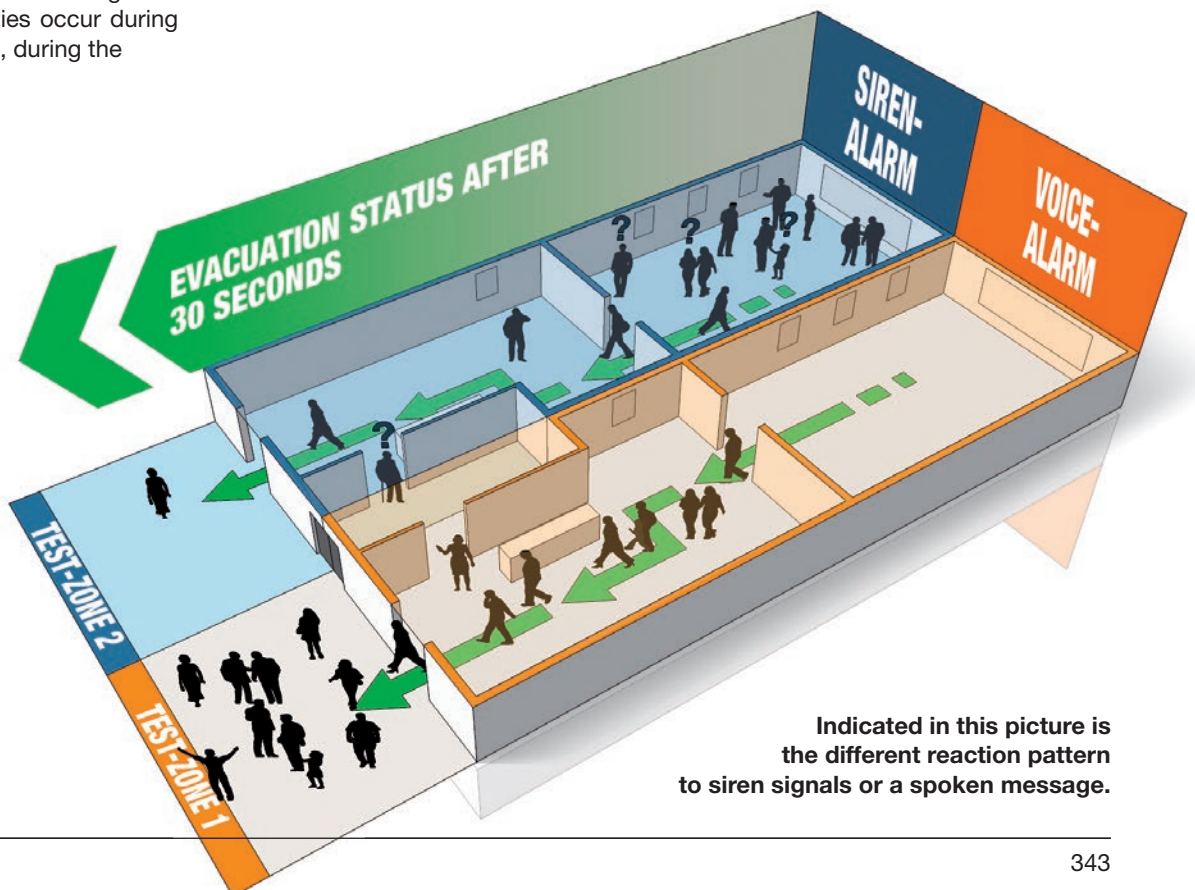
smouldering fire phase. That's why a quick and orderly evacuation is the best way to save lives.

The unexcitedly spoken message of a voice evacuation (VA) system communicates the need for action clearly. The addressees react without hesitation and leave the building, before smoke has spread and blocked the escape. Panic will be avoided, and it's even possible to safely guide all people to their nearest emergency exit.

Additionally, rescuers is given the opportunity to communicate a changing situation directly to all persons still inside the building.



Voice evacuation of selected floors in a Hotel.



Indicated in this picture is the different reaction pattern to siren signals or a spoken message.

## EN 54 FIRE ALARM SYSTEMS

While IEC 60849 as an application norm covers the evacuation system as a whole, EN 54 addresses the individual products this system comprises of. The demands for VA products are regulated in the following parts of EN 54:

### EN 54-4 Power supply equipment

Crucial and new demand is mainly an ageing control for the accumulators by monitoring the internal resistance of the complete uninterruptible power supply. Additionally, the charging characteristic of the used accumulators has to be considered in the layout of the charger.

### EN 54-16 Voice alarm control systems

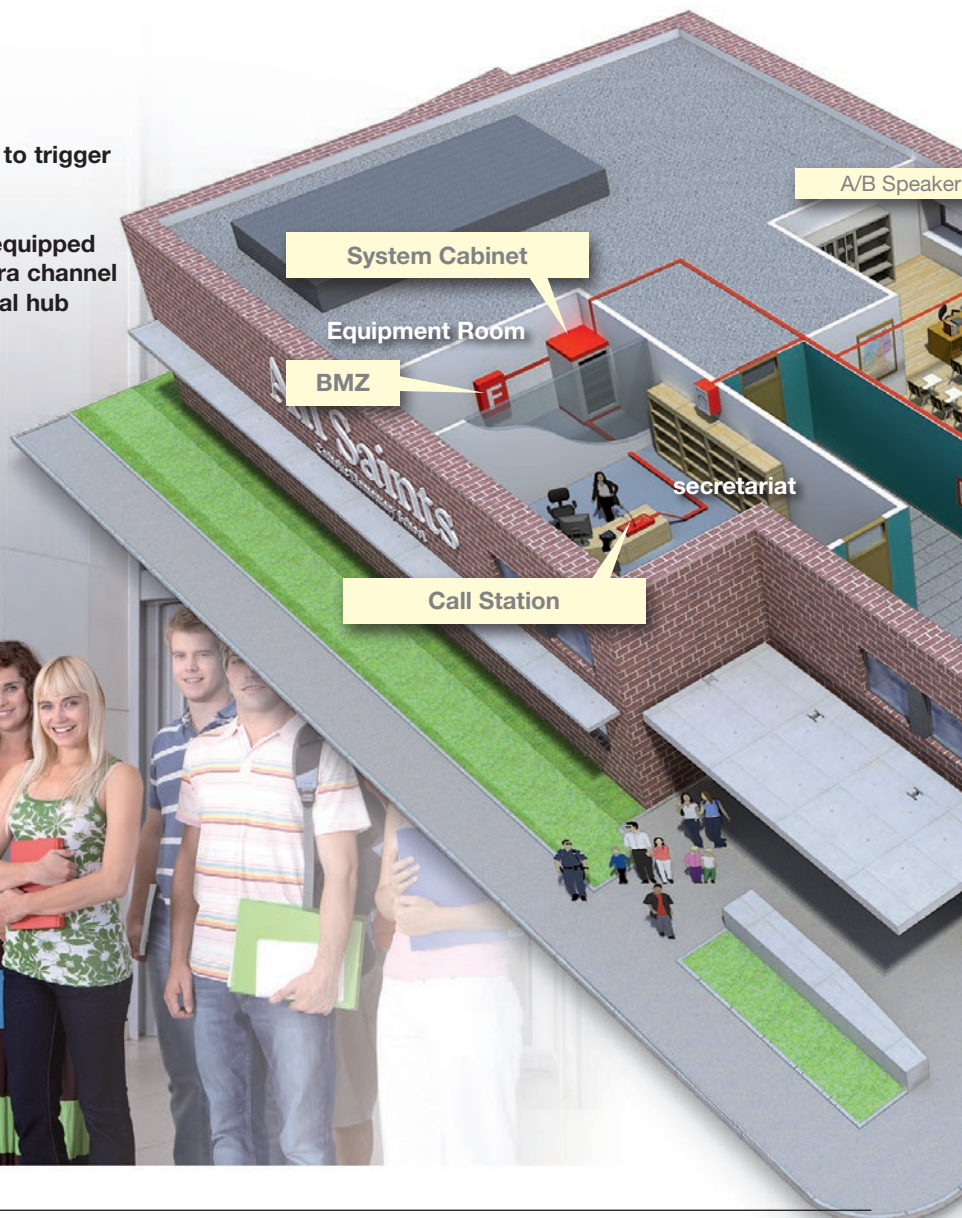
Demands on the functionality of a VA system are very similar to IEC 60849. EN 54 enhances the older norm with a wide variety of tests to validate a high level of refractiveness against environmental impacts and durability under heavy load. Additionally, the demanded quality level for electrical and acoustical parameters has been raised substantially.

### EN 54-24 Loudspeakers for Voice Alarm

Core parts of EN 54-24 are reviews of the production tolerances, long-term stability and corrosion resistance. The demands for refractiveness against environmental impacts have been raised substantially, too.

» RCS systems offer various possibilities to trigger a ‚silent alarm‘. «

» RCS evacuation solutions have been equipped with extra features, for example an extra channel to communicate directly with the central hub from any classroom. «

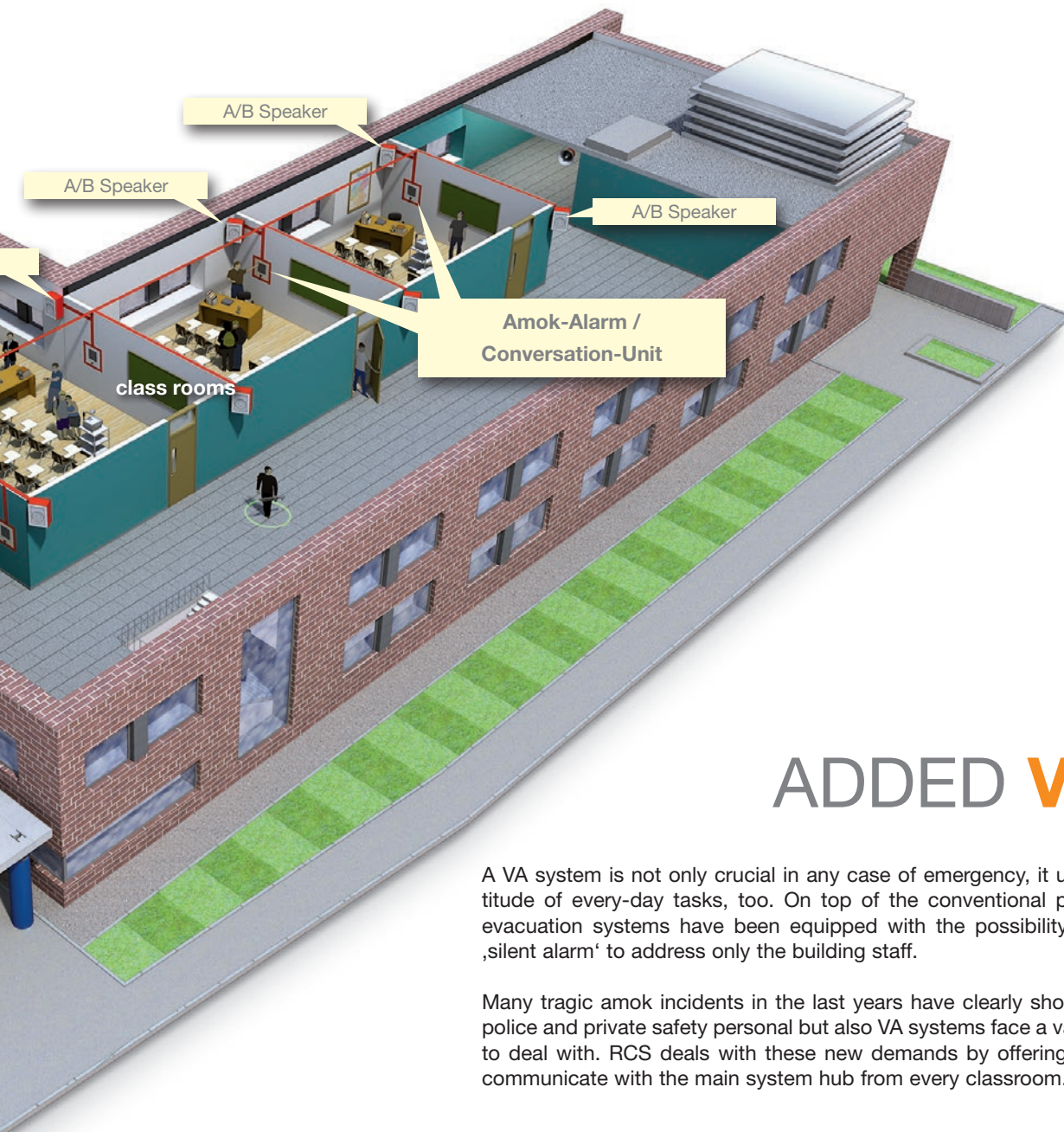


## THE RCS SOLUTION



Our experts for VA systems work hand in hand with engineering offices. They ensure that project engineers can benefit from new development and extended product features already in early stages of a system design to gain advantages in a highly price-sensitive market.

RCS's proven digital technology offers outstanding functionality and scalability, combined with the reliability and durability you can expect from a security installation. System racks can be provided fully assembled and preconfigured by our rack building department to minimize the effort for our customers and installers.



## ADDED VALUE

A VA system is not only crucial in any case of emergency, it usually serves a multitude of every-day tasks, too. On top of the conventional paging features RCS evacuation systems have been equipped with the possibility to trigger a coded 'silent alarm' to address only the building staff.

Many tragic amok incidents in the last years have clearly shown that not only the police and private safety personal but also VA systems face a variety of new threats to deal with. RCS deals with these new demands by offering a direct channel to communicate with the main system hub from every classroom.

## QUALITY, GUARANTEED BY **NORMS**



Because of its life-saving purpose, a voice evacuation (VA) system should meet high requirements. Those are fixed in various norms. Not only the hardware is regulated, but the planning, setup and operation of a VA system, too.

»The norms ensure a consistent minimum standard that's valid in all EU countries. These regulations give planners, erecting and operating companies mandatory guidelines to work with.«

The norms ensure a consistent minimum standard that's valid in all EU countries. These regulations give planners, erecting and operating companies mandatory guidelines to work with. If agreed upon in private contracts, these norms become binding. Even if they are not mentioned in a contract, they do serve as a legal standard in an arbitration between business partners. By their nature norms are very helpful to completely avoid any litigation between contracting parties.

### The important norms for the planning and installation of VA systems are:

#### IEC 60849

##### Sound systems for emergency purposes

The roots of IEC 60849 date as far back as 1999. It's based on the German norm VDE 0828 that has been launched after a fatal fire in the Düsseldorf airport. The unnoticed defect of a part of the voice evacuation system was responsible for the death of sixteen persons.

Consequently the demands in VDE 0828 / IEC 60849 take great care of ensuring a flawless function of the safety-critical system. Therefore a voice evacuation system has to monitor itself and all critical accessories and inform the operator instantly if a fault occurs.



#### EN 54

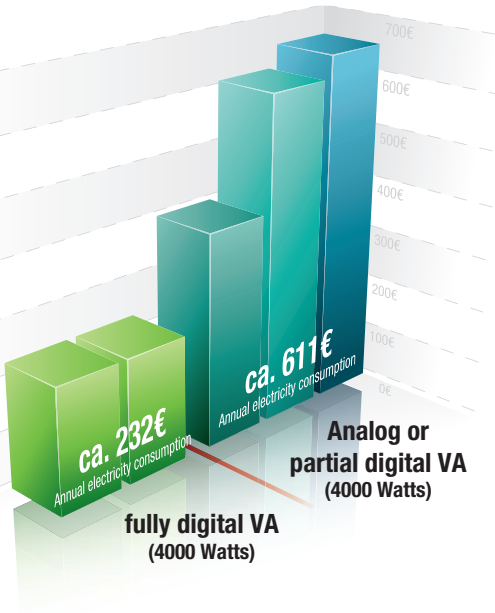
##### Fire detection and fire alarm systems

The close relationship between fire detection and voice evacuation system has been addressed by including the VA systems into EN 54.

Since 2008 all VA components are part of this product norm and have to be tested and certified by independent laboratories. An important part of this certification cycle is a yearly inspection of the manufacturing plant to ensure a constant product quality.



# ENVIROMENT-FRIENDLY



Connected to the fire detection system, a VA unit guards a building every day and every night. Keeping that in mind, our engineers did not rest and optimised RCS system solutions to reach the highest energy efficiency levels. By using this advanced technology, you not only make you contribution to the preservation of a healthy environment, over the lifetime of the system you'll save considerable expenses, too.

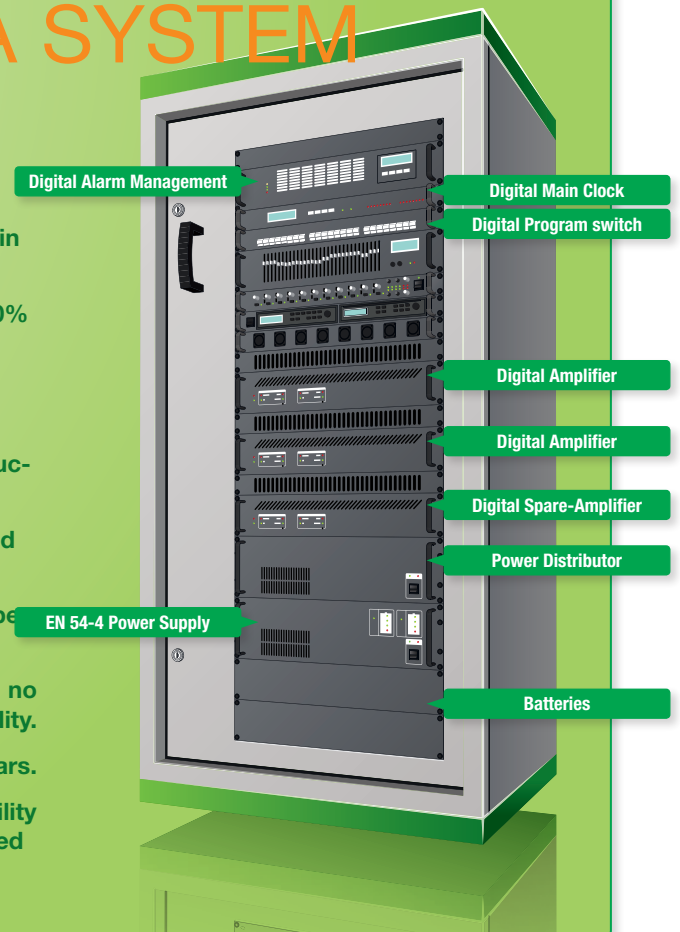
»By using this advanced technology, you not only make you contribution to the preservation of a healthy environment, over the lifetime of the system you'll save considerable expenses, too«

The modular layout of RCS VA systems ensures that each rack is matched to meet the demands of an individual building management exactly. No unnecessary units are applied. Another crucial point is the efficiency of our class D amplifiers. They do not only use very little energy themselves, they also offer great cost-reduction potential because of their reduced need for emergency backup power. In many cases, even a climate control of the engineering room might be unnecessary.

## DESIGN AND ADVANTAGES OF A FULLY DIGITAL VA SYSTEM

### WHAT ARE THE CORE COMPONENTS OF A FULLY DIGITAL VA SYSTEM?

- From message handling and alarm management to the power amplifiers all relevant components are implemented in digital technology.
- Digital (class D) power amplifiers provide an efficiency of 80% or more.
- The energy consumption of RCS digital power amplifiers is 80% lower compared to conventional amplifiers.
- In digital amplifiers an automatic standby mode further reduces the energy consumption when the system is not in use.
- The massively reduced power draw helps save money spend on energy consumption.
- The battery capacity of the emergency backup supply can be reduced considerably, saving cost and space.
- Digital power amplifiers run cool without fans, so there are no moving parts inside them, which results in an increased reliability.
- The typical life expectancy of a RCS digital amplifier is 20 years.
- Very low heat loss of the digital amplifiers offers the possibility to design VA systems that do not need to reside in AC cooled rooms.





## »»OUR VISION

It is our vision as a leading company to enrich the market in Germany and Europe not only with innovative products but also with intelligent ideas. Not just today but in the future! <<

## »»OUR MISSION

is to constantly improve the technical standards of our products with regard to quality, cost-effectiveness and eco friendliness. Our service, support and customer satisfaction are supposed to strengthen the RCS®-brand even more! <<

**RCS AUDIO-SYSTEMS**  
KATALOG 2015-16

**RCS**  
Dreh- & Mobil-  
**MEGAPHONE**  
**MOBILVERSTÄRKER**  
»SOUNDMASTER«  
1983

**RCS**  
Professionelle Kommunikations-Systeme  
1977

**RCS Communications-Systeme**  
1980  
Machen Sie Ihr Unternehmen rationeller und moderner durch verbesserte elektronische Kommunikationssysteme... Sie werden dadurch Kosten sparen.

2009

2015

## More than 40 years of experience ...

## OUR EXPERTISE DESERVES YOUR CONFIDENCE

Expertise depends on experience and that cannot be achieved overnight. No, it does take time! Time needed for the development of new technologies, time needed to gain experience, time needed to learn and to learn about our customers personal desires.

Regarding the 100V PA technology – RCS® is one of the leading top brands in this special market segment in Germany.

Why? Because manufacturing quality, functionality and **cost/performance ratio** of our entire product range are superior. Our slogan “**Advantage through superior quality**” shall not simply be a keyword but a major requirement for our RCS® products. Any requirement needed for **Quality Assurance** such as the latest standards are continuously being improved and upgraded for your satisfaction.

Our company credo can be reduced to one point:

» The fulfillment of the customer's request is the center of our activity - the quality of course «

The Executive

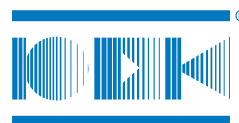
Ulf Laube, managing director



Tino Elsner, managing director



TÜV certified ISO 9001:2008



Mitglied der  
Leistungsgemeinschaft  
Beschallungstechnik  
im ZVEI-Fachverband  
Sicherheitssysteme

ZVEI

» Safety in the building means more than the legally performance of duties statutory duties «



### RCS headquarters in Bad Aibling, Germany

RCS Audio-Systems is one of the few certified manufacturers to supply factory-wired complete systems for voice alarm systems (VAS) and electro-acoustic emergency warning systems (ENS). Our certified loudspeakers complete the product range „Made in Germany“.



### CUSTOMER SERVICE & SALES

**Flexibility.** The fulfilment of customer requirements is the linchpin of our company. That's why the goal of our sales staff is to provide an effective and project-oriented solution for their specific needs.

### CALCULATION & OFFERS

**Price-performance ratio.** From the basics to the planning; once all the targets have been set, the focus of our calculators is to find the balance between the budget and the desired implementation of the sound system.



## PLANNING & DESIGN

**Personally.** Our project consultants support you in the coherent preparation of planning or project planning through to installation and documentation.



Ulysses room-acoustics simulation for optimal and complete Positioning of speakers.



## COMMISSIONING & MAINTENANCE

**Accompanying.** Of course, our technicians accompany the expert acceptance of the VAS as part of the factory commissioning.



## CENTRAL PRODUCTION

**Serial production** of ELA control panels and voice alarm systems. For permanent installation, the 19" cabinets are factory-wired and ready for use.



## WAREHOUSE & LOGISTICS

**Short delivery times** are an absolute necessity for many companies. Our stock ensures fast response times and immediate availability of the desired products.

## PRODUCTION & SERVICE

**Production „Made in Germany“.** This term is for us system. We produce audio components such as Alarm management systems, speakers, amplifiers, mixing panels, etc.



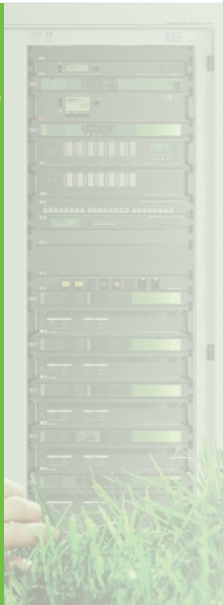
Mitglied der  
Leistungsgemeinschaft  
Beschallungstechnik  
im ZVEI-Fachverband  
Sicherheitssysteme

for Engineering Companies



- Partnership advice and individual assistance**  
Our project consultants support you personally in the coherent preparation of planning or project planning.
- Clear view for planners**  
We offer individually tailored product seminars and trainings (including those necessary for the specialist VAS)
- We are here for you**  
From the basic analysis through planning, to installation and documentation. The complete solution from a single source.
- Documentation service for engineering offices**  
Comprehensive system documentation from plant planning to documentation.

the System Technology



- Directly from the certified manufacturer**  
Factory-wired systems with clearly defined, clear wiring
- Certified safety**  
Certified to EN 54 -4 / EN 54-16 / EN 54-24 / DIN EN 50849 ACCORDING TO VDE 0833-4
- Sustainable plant engineering:**  
Energy-efficient, fully digital voice alarm systems (VAS)
- Intelligent modular design:**  
System components can be individually assembled or exchanged with the 19" bays

the Manufacturer RCS



- Expertise**  
With over 40 years of experience in electroacoustic, we are your partner for acoustic alarm systems
- Complete Program**  
from the loudspeaker via 100 V call systems to the digital voice alarm system
- Made in Germany:**  
Production site in Bad Aibling, Germany



**ELA / ENS / SAA / AMOK-ALARMING**



**SERVICE FOR ENGINEERING COMPANIES**

**Sustainable: ✓**

Energy efficiency  
Fully digital system technology

**Personally: ✓**

Support during project planning by project consultant

**Safe: ✓**

Conformant to standards  
Directly from the certified manufacturer

**Qualitative: ✓**

Made in Germany  
Member of LGB in the ZVEI



Training in small groups in order to learn more and become more familiar with the RCS®-Products.

## PASSING ON OUR EXPERTISE

### Company-seminars

Consideration of your specific requirements is one of the main aspects regarding our seminars.

Each company is unique, therefore you need to be provided with unique solutions! Content, volume and method are exactly adapted to your knowledge and experience.

**Main training focus is to provide the participants with the most effective and productive strategy on how to deal with our products.**

From the basics of PA technology to essential basics on Norms of voice alarm systems! We are also very happy to provide you with one-day seminars.

### Laid-back atmosphere:

Even sensitive subjects may be discussed internally within the group. This is why we place emphasis on trainings with small groups!



### The positive side-effect:

**When talking with our customers it often becomes clear what an individual market needs for the future.**

**We will seize a suggestion with great commitment to create reasonable solution for you and your customers.**



Our company building is currently constructed in Markfeld, Bad Aibling, in order to optimize our efficiency and to master any request.

A very friendly, light and transparent building is going to combine administration, production and warehouse.

**We are very much looking forward to welcoming you in our company building.**

The RCS Headquarters  
in Bad Aibling (Germany)



### Our Address:

RCS AUDIO-SYSTEMS GmbH  
Gewerbepark Markfeld 5  
D-83043 Bad Aibling

Telephone: 08061-3501-0  
E-Mail: [info@rcs-audio.com](mailto:info@rcs-audio.com)



### A

<b>AAS-200 A</b>	Amok-Alarm System, (GSM/GPS)	<b>NEW</b>	<b>116</b>
<b>AB-200 B</b>	UHF-Antenna-Booster, (1 pair)		<b>280, 282</b>
<b>ABB-400</b>	Storage Box, (for HM-012/S; HM-025/S; SM-025/S; WHM-025/S)		<b>326, 327</b>
<b>ABT-W6</b>	EN 54-24 Alarming-Ceiling Speaker, 6 W, 100 V, white, all-metal	<b>NEW</b>	<b>159</b>
<b>ABT-W6 AB</b>	EN 54-24 Alarming-Ceiling Speaker, 2x 6 W, 100 V, white, all-metal	<b>NEW</b>	<b>159</b>
<b>AC-300</b>	Connecting cable, 30 m, (for additional SOUND-CENTER)		<b>296, 300, 319, 323</b>
<b>ACC-050</b>	XLR-Cable, 5 m		<b>273</b>
<b>ACC-051</b>	XLR/Jack 6,3 mm, (Mono)-Cable, 5 m		<b>273</b>
<b>ACC-054</b>	Cable Jack 3,5 mm on 2 x Cinch, 5 m		<b>273</b>
<b>ACC-055</b>	Cable 2x Jack on 2x Jack 6,3 mm, 5 m		<b>273</b>
<b>ACC-056</b>	Cable Jack 6,3 mm, (Stereo) on 2x Jack, (Mono), 5 m		<b>273</b>
<b>ACC-057</b>	Cable 2x Cinch, (M) on 2x Cinch, (M), 1 m		<b>272</b>
<b>ACC-058</b>	Cable 2x Cinch, (F) on 2x Cinch, (M), 3 m		<b>272</b>
<b>ACC-059</b>	Cable 2x Jack 6,3 mm, 5 m		<b>272</b>
<b>ACC-060</b>	Cable 2x Jack 3,5 mm, 2 m		<b>272</b>
<b>ACC-061</b>	Cable 2x Jack 3,5 mm, 3 m		<b>272</b>
<b>ACC-100</b>	XLR-Cable, 10 m		<b>273</b>
<b>ACC-101</b>	XLR/Jack 6,3 mm (Mono)-Cable, 10 m		<b>273</b>
<b>ACC-107</b>	Speaker-Cable, 10 m		<b>272</b>
<b>ACC-108/xx</b>	Speaker-Cable, [desired length]		<b>272</b>
<b>ACS-002</b>	Charger-Kit, (for 2 pcs. UBH-016)		<b>286</b>
<b>ACS-008</b>	Charger-Kit, (for 8 pcs. UBR-016 or UBT-016)		<b>286</b>
<b>ACS-020</b>	Charger-Bag, (for 20 pcs. UBR-016 or UBT-016)		<b>286</b>
<b>ACS-040</b>	Charger-Case, (for 40 pcs. UBR-016 or UBT-016)		<b>286</b>
<b>ACT-050/xx BNC</b>	Antenna Cable, [desired length]		<b>282</b>
<b>ACT-050/xx TNC</b>	Antenna Cable, [desired length]		<b>278</b>
<b>AD-125 A</b>	Audio Distributor Amplifier, 1 RU		<b>78</b>
<b>AH-200 B</b>	UHF-Antenna-Holder, (1 pair)		<b>280, 282</b>
<b>AH-200 TNC</b>	UHF-Antenna-Holder, (1 pair)		<b>278</b>
<b>AH-300</b>	Antenna-Holder, (for AN-300)		<b>282</b>
<b>AM-100 BT</b>	BT-Player, (for ME-1A)	<b>NEW</b>	<b>145</b>
<b>AM-100 DV</b>	DVD/CD/USB/SD-Player, (for ME-1A)		<b>145</b>
<b>AM-100 TU</b>	PLL Synthesizer Tuner, (for ME-1A)		<b>145</b>
<b>AM-201 CD</b>	CD-MP3/USB/SD-Card Player Module, (for ME-1A)		<b>145</b>
<b>AN-200 B</b>	External UHF-Antenna		<b>280</b>
<b>AN-300</b>	Active Directional Antenna		<b>282</b>
<b>APG-300</b>	Surface-mount housing, (for UPM-300 H and UPM-300 V)	<b>NEW</b>	<b>113</b>
<b>APG-400</b>	Surface-mount housing, (for PWM-101B and UPM-431A)		<b>28, 111</b>
<b>APM-720 D</b>	Automatic Mixing Amplifier, (200 W, 3 RU), 7 Lines, with DSP	<b>NEW</b>	<b>231</b>
<b>APM-740 A</b>	Automatic Mixing Amplifier, (400 W, 3 RU), 7 Lines	<b>NEW</b>	<b>232</b>
<b>APM-941 D</b>	Automatic Mixing Amplifier, (400 W + 100 W, 3 RU), 9 Lines, with DSP	<b>NEW</b>	<b>230</b>
<b>AS-100</b>	Splitter- and Combiner-Set, (1 pair)		<b>282</b>
<b>AS-201 B</b>	UHF-Antenna splitter, 1 RU	<b>NEW</b>	<b>280</b>
<b>ASS-104</b>	Speaker Connector, (4-Pin)		<b>271</b>
<b>ASS-108</b>	Speaker Connector, (8-Pin)		<b>271</b>
<b>ATT-100</b>	100 V Line Output Attenuator, 5-fold, (for VLA-/VLZ-Series)		<b>150</b>
<b>AXJ-100 F</b>	XLR/Jack-Adapter, female		<b>268</b>
<b>AXJ-100 M</b>	XLR/Jack-Adapter, male		<b>268</b>

**B**

<b>BA-029</b>	Replacement Battery, 2.9 Ah, (for WPP-050 U1/U2)	<b>NEW</b>	<b>314</b>
<b>BA-052</b>	Lead Acid Battery-Set, for internal operation (26 Ah)		<b>84</b>
<b>BA-080</b>	Lead Acid Battery-Set, for external operation (45 Ah)		<b>84, 85</b>
<b>BA-120C</b>	1-Channel-Amplifier, (180/120 W, 2 RU)		<b>65</b>
<b>BA-120DP</b>	1-Channel-Amplifier, (180/120 W, 2 RU), monitored with FD-21		<b>61</b>
<b>BA-140</b>	Lead Acid Battery-Set, for external operation (65 Ah)		<b>86, 87</b>
<b>BA-240C</b>	1-Channel-Amplifier, (360/240 W, 2 RU)		<b>65</b>
<b>BA-240DP</b>	1-Channel-Amplifier, (360/240 W, 2 RU), monitored with FD-21		<b>61</b>
<b>BA-480C</b>	1-Channel-Amplifier, (720/480 W, 2 RU)		<b>65</b>
<b>BA-480DP</b>	1-Channel-Amplifier, (720/480 W, 2 RU), monitored with FD-21		<b>61</b>
<b>BA-720DP</b>	1-Channel-Amplifier, (960/720 W, 2 RU), monitored with FD-21 and FM-30		<b>63</b>
<b>BA-1000DP</b>	1-Channel-Amplifier, (1500/1000 W, 2 RU), monitored with FD-21 and FM-30		<b>63</b>
<b>BA-1020</b>	10-Channel-Amplifier, (10x 45/20 W, 2 RU)		<b>59</b>
<b>BA-2120DP</b>	2-Channel-Amplifier, (2x 180/120 W, 2 RU)		<b>67</b>
<b>BA-2240DP</b>	2-Channel-Amplifier, (2x 360/240 W, 2 RU)		<b>67</b>
<b>BA-2480DP</b>	2-Channel-Amplifier, (2x 720/480 W, 3 RU), monitored with FD-21 and FM-30		<b>69</b>
<b>BA-4120DP</b>	4-Channel-Amplifier, (4x 180/120 W, 3 RU), monitored with FD-21		<b>71</b>
<b>BA-4240DP</b>	4-Channel-Amplifier, (4x 360/240 W, 3 RU), monitored with FD-21		<b>71</b>
<b>BC-006</b>	Design-Speaker 6 W, 100 V		<b>174</b>
<b>BC-006R</b>	Design-Speaker 6 W, 100 V, with Controller		<b>174</b>
<b>BC-010</b>	Design-Speaker 10 W, 100 V		<b>174</b>
<b>BC-010R</b>	Design-Speaker 10 W, 100 V, with Controller		<b>174</b>
<b>BC-104</b>	Cabinet Speaker 4 W, 100 V		<b>179</b>
<b>BC-104R</b>	Cabinet Speaker 4 W, 100 V, with Controller		<b>179</b>
<b>BC-106</b>	Cabinet Speaker 6 W, 100 V		<b>179</b>
<b>BC-106EN</b>	EN 54-24 Alarming-Cabinet Speaker, 6 W, 100 V		<b>161</b>
<b>BC-106R</b>	Cabinet Speaker 6 W, 100 V, with Controller		<b>179</b>
<b>BC-110</b>	Cabinet Speaker 10 W, 100 V		<b>179</b>
<b>BC-110C</b>	Cabinet Speaker 10 W, 100 V, 2-way system		<b>178</b>
<b>BC-110CR</b>	Cabinet Speaker 10 W, 100 V, 2-way system, with Controller		<b>178</b>
<b>BC-110R</b>	Cabinet Speaker 10 W, 100 V, with Controller		<b>179</b>
<b>BC-120C</b>	Cabinet Speaker 20 W, 100 V, 2-way system		<b>178</b>
<b>BC-120CR</b>	Cabinet Speaker 20 W, 100 V, 2-way system, with Controller		<b>178</b>
<b>BC-130C</b>	Cabinet Speaker 30 W, 100 V, 2-way system		<b>178</b>
<b>BC-130CR</b>	Cabinet Speaker 30 W, 100 V, 2-way system, with Controller		<b>178</b>
<b>BC-215</b>	Double-Direction Speaker, 15 W, 100 V		<b>197</b>
<b>BC-230C</b>	Double-Direction Speaker, 30 W, 100 V, 2-way system		<b>197</b>
<b>BC-304</b>	Cabinet Speaker 4 W, 100 V		<b>180</b>
<b>BC-304R</b>	Cabinet Speaker 4 W, 100 V, with Controller		<b>180</b>
<b>BC-306</b>	Cabinet Speaker 6 W, 100 V		<b>180</b>
<b>BC-306R</b>	Cabinet Speaker 6 W, 100 V, with Controller		<b>180</b>
<b>BC-310</b>	Cabinet Speaker 10 W, 100 V		<b>180</b>
<b>BC-310R</b>	Cabinet Speaker 10 W, 100 V, with Controller		<b>180</b>
<b>BC-512AB</b>	A/B-Cabinet Speaker 2x 6 W, 100 V		<b>172</b>
<b>BC-512EN</b>	EN 54-24 Alarming-Cabinet Speaker, 2x 6 W, 100 V		<b>160</b>
<b>BC-520AB</b>	A/B-Cabinet Speaker 2x 6 W, 100 V		<b>172</b>
<b>BCH-406</b>	Cabinet Speaker, MDF-Corpus, 6 W, 100 V		<b>181</b>
<b>BCH-406R</b>	Cabinet Speaker, MDF-Corpus, 6 W, 100 V, with Controller		<b>181</b>
<b>BCH-410</b>	Cabinet Speaker, MDF-Corpus, 10 W, 100 V		<b>181</b>
<b>BCH-410R</b>	Cabinet Speaker, MDF-Corpus, 10 W, 100 V, with Controller		<b>181</b>
<b>BCH-612AB</b>	A/B-Cabinet Speaker, MDF-Corpus, 2x 6 W, 100 V		<b>173</b>

<b>BCH-620AB</b>	A/B-Cabinet Speaker, MDF-Corpus, 2x 10 W, 100 V			173
<b>BC-HR</b>	Wooden Rear Panel, (for BC-Series Speaker)			172, 179
<b>BCR-006</b>	Design-Speaker 6 W, 100 V, with rear panel			175
<b>BCR-006R</b>	Design-Speaker 6 W, 100 V, with rear panel and Controller			175
<b>BCR-010</b>	Design-Speaker 10 W, 100 V, with rear panel			175
<b>BCR-010R</b>	Design-Speaker 10 W, 100 V, with rear panel and Controller			175
<b>BM-10U</b>	BT-Player-Module, for all Small Centrals with Module compartment or ME-2A/4A	<b>NEW</b>	123, 125, 127, ... 143, 144	
<b>BS-150X</b>	Microphone Floor Stand, with XLR-Connector	<b>NEW</b>		233
<b>BS-170</b>	Microphone Floor Stand			266
<b>BS-185</b>	Microphone Floor Stand, with Microphone boom			266
<b>BS-190</b>	Microphone Floor Stand1			266
<b>BS-195</b>	Microphone Floor Stand			266, 319, 324
<b>BSG-260W</b>	Ball Protection Grid, for Ceiling Speaker, for RC-/SC-Series			222
<b>BSG-280W</b>	Ball Protection Grid, for Ceiling Speaker, BC-Series			222
<b>BSG-300W</b>	Ball Protection Grid, for Cabinet Speaker, for DH-115S			222
<b>BSS-3024C</b>	Fire Protection Cabinet for RSS-5524, (24 RU)			243
<b>BSS-3030C</b>	Fire Protection Cabinet for RSS-5530, (30 RU)			243
<b>BSS-3040C</b>	Fire Protection Cabinet for RSS-5540, (40 RU)			243
<b>BW-200</b>	Speaker ball throwing-proof certified, (optional)	<b>NEW</b>		186

## C

<b>CB-008</b>	Carriage and Storage Bag, (for LG-040)			329
<b>CB-030</b>	Carriage and Storage Bag, (for POWER-PHONE)			316
<b>CB-130</b>	Carriage and Storage Bag, (for up to 3 Stands)		296, 300, 316, 319, 323	
<b>CB-220</b>	Carriage and Storage Bag, (for WPS-220A)	<b>NEW</b>		311
<b>CBR-004S</b>	Compact-Cabinet Speaker 4 W, 100 V, black, with rear panel			177
<b>CBR-004W</b>	Compact-Cabinet Speaker 4 W, 100 V, white, with rear panel			177
<b>CBR-006S</b>	Compact-Cabinet Speaker 6 W, 100 V, black, with rear panel			177
<b>CBR-006SR</b>	Compact-Cabinet Speaker 6 W, 100 V, black, with rear panel and volume control			176
<b>CBR-006W</b>	Compact-Cabinet Speaker 6 W, 100 V, white, with rear panel			177
<b>CBR-006WR</b>	Compact-Cabinet Speaker 6 W, 100 V, white, with rear panel and volume control			176
<b>CBS-004S</b>	Compact-Cabinet Speaker 4 W, 100 V, black			177
<b>CBS-004W</b>	Compact-Cabinet Speaker 4 W, 100 V, white			177
<b>CBS-006S</b>	Compact-Cabinet Speaker 6 W, 100 V, black			177
<b>CBS-006SR</b>	Compact-Cabinet Speaker 6 W, 100 V, black, with volume control			176
<b>CBS-006W</b>	Compact-Cabinet Speaker 6 W, 100 V, white			177
<b>CBS-006WR</b>	Compact-Cabinet Speaker 6 W, 100 V, white, with volume control			176
<b>CC-603F</b>	Cinch-Socket Set, black, female			269
<b>CC-603M</b>	Cinch-Plug Set, black, male			269
<b>CDP-10USB</b>	CD/MP3-Player module, for all Small Centrals with Module compartment or ME-2A/4A		123, 125, 127, ... 142, 144	
<b>CDR-10USB</b>	CD/MP3-Tuner module, for all Small Centrals with Module compartment or ME-2A/4A		123, 125, 127, ... 142, 144	
<b>CPA-120X</b>	Small Central Unit, 180/120 W, 3 RU			137
<b>CPA-240X</b>	Small Central Unit, 360/240 W, 3 RU			137
<b>CPA-3060C</b>	Small Central Unit, 90/60 W, 3 RU			139
<b>CPA-3120C</b>	Small Central Unit, 180/120 W, 3 RU			139
<b>CPA-5120C</b>	Small Central Unit, 180/120 W, 3 RU			135
<b>CPA-5240C</b>	Small Central Unit, 360/240 W, 3 RU			135
<b>CPA-5480C</b>	Small Central Unit, 720/480 W, 3 RU			135
<b>CS-6HT60BS</b>	EN 54-24 Alarming-Music Horn, 60 W, 2-way system			166
<b>CS-015</b>	Sound-Projector, 15 W, 100 V			194
<b>CS-030</b>	Sound-Projector, 30 W, 100 V			194
<b>CS-110A</b>	Four-tone Chime and Siren unit, 1 RU			91

<b>CS-115 S</b>	Round-Cabinet Speaker, 15 W, 100 V, black			<b>182</b>
<b>CS-115 W</b>	Round-Cabinet Speaker, 15 W, 100 V, white			<b>182</b>
<b>CS-212</b>	Column Speaker, 12 W, 100 V, aluminium			<b>202</b>
<b>CS-220</b>	Column Speaker, 20 W, 100 V, aluminium			<b>202</b>
<b>CS-601 BS</b>	EN 54-24 Alarming-Cabinet Speaker, 6 W, 100 V, white			<b>162</b>
<b>CS-602 BS</b>	EN 54-24 A/B Alarming-Cabinet Speaker, 2x 6 W, 2x 100 V, white			<b>162</b>
<b>CS-6106 EN</b>	EN 54-24 Alarming-Ceiling Speaker, 6 W, 100 V, with dust cover			<b>158</b>
<b>CS-6110 EN</b>	EN 54-24 Alarming-Ceiling Speaker, 10 W, 100 V, with dust cover			<b>158</b>
<b>CSL-106 B</b>	Spot-Design-Ceiling Speaker, 6 W, 100 V, black			<b>189</b>
<b>CSL-106 G</b>	Spot-Design-Ceiling Speaker, 6 W, 100 V, gold			<b>189</b>
<b>CSL-106 S</b>	Spot-Design-Ceiling Speaker, 6 W, 100 V, silver			<b>189</b>
<b>CSL-106 W</b>	Spot-Design-Ceiling Speaker, 6 W, 100 V, white			<b>189</b>
<b>CSP-115</b>	Sound-Projector, 15 W, 100 V			<b>195</b>
<b>CSP-115D</b>	Double-Direction Speaker, 15 W, 100 V			<b>196</b>
<b>CSP-220</b>	Sound-Projector, 20 W, 100 V			<b>195</b>
<b>CSP-220 D</b>	Double-Direction Speaker, 20 W, 100 V			<b>196</b>
<b>CSQ-106 W</b>	Spot-Design-Ceiling Speaker, 6 W, 100 V, white			<b>188</b>
<b>CT-552 WTBS</b>	EN 54-24 Pro-Sound Speaker, 30 W, 100 V, 2-Wege, incl. Wall bracket			<b>163</b>

**D**

<b>DA-200</b>	Pro-Sound Class-D Amplifier, 2x 200 W			<b>75</b>
<b>DA-600</b>	Pro-Sound Class-D Amplifier, 2x 600 W			<b>75</b>
<b>DA-1000</b>	Pro-Sound Class-D Amplifier, 2x 1000 W			<b>75</b>
<b>DBA-250 D</b>	1-Channel-Amplifier, (375/250 W, 2 RU), digital			<b>51</b>
<b>DBA-500 D</b>	1- or 2-Channel-Amplifier, (750/500W / 2x 375/250 W, 2 RU), digital			<b>51</b>
<b>DBA-501 A</b>	1-Channel-Amplifier, (720/500 W RMS, 2 RU), digital			<b>53</b>
<b>DBA-4150 A</b>	2- or 4-Channel-Amplifier, (2x 300W / 4x 150W RMS, 2 RU), digital	<b>NEW</b>		<b>55</b>
<b>DBA-4600 A</b>	4-Channel-Amplifier, (4x 600W RMS, 1 RU), digital	<b>NEW</b>		<b>57</b>
<b>DGM-400</b>	Dynamic Gooseneck Microphone			<b>264</b>
<b>DH-110 S</b>	Horn Speaker, 10 W, 100 V			<b>204</b>
<b>DH-115 A</b>	Horn Speaker, 15 W, 100 V			<b>207</b>
<b>DH-115 S</b>	Horn Speaker, 15 W, 100 V			<b>204</b>
<b>DH-125 HD</b>	Horn Speaker, 25 W, 100 V			<b>205</b>
<b>DH-130 S</b>	Horn Speaker, 30 W, 100 V			<b>204</b>
<b>DH-135 F</b>	Horn Speaker, 35 W, 100 V			<b>206</b>
<b>DH-135 HD</b>	Horn Speaker, 35 W, 100 V			<b>205</b>
<b>DH-150 HD</b>	Horn Speaker, 50 W, 100 V			<b>205</b>
<b>DL-030 F</b>	Horn Speaker, 30 W, 16 ohms			<b>206</b>
<b>DL-055 AS</b>	Speaker-Socket (Surface mounting), with Speakon-Socket	<b>NEW</b>		<b>267</b>
<b>DL-055 US</b>	Speaker-Socket (flush mounting), with Speakon-Socket	<b>NEW</b>		<b>267</b>
<b>DL-120</b>	Desk-Light (for SOUND-DESK)			<b>319</b>
<b>DLE-008 A</b>	Microphone Extension Unit, (for DLM-108A)	<b>NEW</b>		<b>42</b>
<b>DLM-108 A</b>	Microphone Station, 8 Lines/all call, (for DZM-808A)	<b>NEW</b>		<b>42</b>
<b>DM-055 AX</b>	Microphone-Box (Surface mounting), with XLR-Socket	<b>NEW</b>		<b>267</b>
<b>DM-055 UX</b>	Microphone-Box (Flush mounting), with XLR-Socket	<b>NEW</b>		<b>267</b>
<b>DM-202 K</b>	Dynamic Microphone, with Jack-Plug	<b>NEW</b>	<b>265, 316, 319, 324</b>	
<b>DM-202 X</b>	Dynamic Microphone, with XLR-Plug	<b>NEW</b>		<b>265</b>
<b>DMF-077</b>	Radio Receiver DCF-Time, 3-wire Version, (for DMT-10)			<b>143</b>
<b>DMH-301</b>	Music Horn, 30 W, 2-way system			<b>203</b>
<b>DMM-618 B</b>	Digital Message Module, 1 RU	<b>NEW</b>		<b>95</b>
<b>DMT-10</b>	Digital-Textmodule and Timer, for Small Centrals with Module compartment or ME-2A/4A		<b>123, 125, 127, ... 143, 144</b>	

<b>DNT-400 DAB</b>	19" DAB Internet Radio Multi-Tuner		147
<b>DPS-720/24</b>	Switching Power Supply, 24V DC, 30 A, (for DBA-4600A)	<b>NEW</b>	57
<b>DRI-208 A</b>	Wall Control Panel, (for DZM-808A), for flush mounting, incl. mounting housing	<b>NEW</b>	42
<b>DSC-016 B</b>	UHF-Receiver Module, to upgrade, 16 selectable frequencies (863-865 MHz)		294, 298, 302, 306
<b>DSC-100</b>	DIGITAL SOUND-CENTER 100, 100 W, (without UHF-Receiver)		298
<b>DSC-100 S1</b>	DIGITAL SOUND-CENTER 100, 100 W, (with integrated 1-Channel UHF-Receiver)		299
<b>DSC-100 S2</b>	DIGITAL SOUND-CENTER 100, 100 W, (with integrated 2-Channel UHF-Receiver)		299
<b>DSC-100 S3</b>	DIGITAL SOUND-CENTER 100 - SET 1		299
<b>DSC-100 S4</b>	DIGITAL SOUND-CENTER 100 - SET 2		299
<b>DSC-100 S5</b>	DIGITAL SOUND-CENTER 100 - SET 3		299
<b>DSC-100 U1</b>	DIGITAL SOUND-CENTER 100 - SET 4		298
<b>DSC-100 U2</b>	DIGITAL SOUND-CENTER 100 - SET 5		298
<b>DSC-100 ZL</b>	Auxiliary Speaker, (for DIGITAL SOUND-CENTER 100)		300
<b>DSC-150</b>	DIGITAL SOUND-CENTER 150, 150 W, (without UHF-Receiver)		294
<b>DSC-150 S1</b>	DIGITAL SOUND-CENTER 150, 150 W, (with integrated 1-Channel UHF-Receiver)		295
<b>DSC-150 S2</b>	DIGITAL SOUND-CENTER 150, 150 W, (with integrated 2-Channel UHF-Receiver)		295
<b>DSC-150 S3</b>	DIGITAL SOUND-CENTER 150 - SET 1		295
<b>DSC-150 S4</b>	DIGITAL SOUND-CENTER 150 - SET 2		295
<b>DSC-150 S5</b>	DIGITAL SOUND-CENTER 150 - SET 3		295
<b>DSC-150 U1</b>	DIGITAL SOUND-CENTER 150 - SET 4		294
<b>DSC-150 U2</b>	DIGITAL SOUND-CENTER 150 - SET 5		294
<b>DSC-150 ZL</b>	Auxiliary Speaker, (for DIGITAL SOUND-CENTER 150)		296
<b>DSM-002 AR</b>	Digital USB/SD-Card Recorder, (for DIGITAL SOUND-CENTER)		294, 298
<b>DSM-003 CD</b>	CD/MP3/USB/SD-Card Player, with BT, (for DIGITAL SOUND-CENTER)	<b>NEW</b>	294, 298
<b>DSM-100 BT</b>	BT-Module, to upgrade, for audio transmission from Smartphone, Tablet or PC		294, 298
<b>DSM-200 BT</b>	BT-Player-Module, with USB and SD-Card, incl. Remote	<b>NEW</b>	294, 298, 311
<b>DVD-200 X</b>	19" DVD-Player, 2 RU		148
<b>DVM-210 A</b>	Digital Audio Amplifier Module, 2x 20 Watt		119
<b>DZM-808 A</b>	Digital 8 Zone Audio-Matrix, 8 IN / 8 OUT, (expandable to 32 IN / 32 OUT)	<b>NEW</b>	43

## E

<b>ECM-400</b>	Electret Cudgel Microphone		265
<b>EG-101</b>	Mounting Case		224
<b>EG-200</b>	Mounting Case, (surface mounting)		224
<b>EGM-300</b>	Electret-Gooseneck microphone		264
<b>ELE-004</b>	›VARES-1000‹ Function Extension Module, (for ELM-106)		10
<b>ELE-006</b>	›VARES-1000‹ Button Extension Module, (for ELM-106)		10
<b>ELM-106</b>	›VARES-1000‹ Digital Microphone Station		10
<b>ELM-106 WO</b>	›VARES-1000‹ Digital Microphone Station, (without RR-120)		10
<b>EM-300 X</b>	Electret-Microphone, with XLR-Plug		265
<b>EP-200</b>	Earphone, (for UBR-016)		285
<b>EP-352</b>	Charger, 3 RU		84
<b>EP-352 RM</b>	Automatic Charger, 3 RU		84
<b>ESC-012 A</b>	›VARES-1000‹ Control-Center, 2 RU		11
<b>ESL-001/X</b>	›VARES-1000‹ Software User language		13
<b>ESM-020 H</b>	›VARES-1000‹ Fire Brigade Hand Microphone		13
<b>ESM-100 D</b>	›VARES-1000‹ Fire Brigade Microphone Station		13
<b>ESP-500 A</b>	Automatic Charger, 3 RU, with Emergency power management		85
<b>ESP-1000 B</b>	EN 54-4 Emergency Power Supply, 2 RU, EN 54-4 certified, with 6 outputs	<b>NEW</b>	87
<b>ESP-2000 B</b>	EN 54-4 Emergency Power Supply, 1 RU, EN 54-4 certified, with 6 outputs		86
<b>ESP-4000 B</b>	EN 54-4 Emergency Power Supply, 2 RU, EN 54-4 certified, with 12 outputs		86
<b>ESS-520</b>	Rack Support Rail Set		254

<b>ESU-002A</b>	Emergency Switchover Unit, (IP66)		150
<b>EXM-420</b>	Electret-Gooseneck Microphone		264
<b>EXM-430S</b>	Electret-Gooseneck Microphone	<b>NEW</b>	233
<b>EXM-435SL</b>	Electret-Gooseneck Microphone, with LED-lightning	<b>NEW</b>	233
<b>EZ-110</b>	Installation Case, (for Series SC-100)		191
<b>EZ-120</b>	Installation Case, (for SC-100 C Series)		156, 157, 169, 191
<b>EZ-400</b>	Installation Case, (for SC-400 WT)		190

**F**

<b>FD-21</b>	Pilot Tone-Module, (for Amplifier „DP“ and VLZ-Series)		60, 62, 66, 68, 70, 128
<b>FM-30</b>	Error Monitoring-Module, (for Amplifier „DP“ and VLZ-Series)		62, 68, 128
<b>FMX-1202</b>	Audio Mixer, 12 Channels		100
<b>FMX-1402R</b>	Audio Mixer, 14 Channels, 9 RU		101
<b>FMX-1602</b>	Audio Mixer, 16 Channels		102
<b>FS-40</b>	Frequency Shifter Module, (for VLZ-Series)		128
<b>FX-425</b>	Pro-Sound 4-Channel Amplifier, 4x 250 W		77

**G**

<b>GEQ-2131A</b>	Graphic-Equalizer, 2 RU, (1 CH, 31-Band)		98
<b>GFM-300</b>	Electret Boundary Microphone		264
<b>GSC-100A</b>	Conference System Control Unit, (2 RU), digital, for up to 60 Microphone Station	<b>NEW</b>	260
<b>GSD-101A</b>	Delegated Station, (1 Button, Slave, for GSC-100 A)	<b>NEW</b>	261
<b>GSP-102A</b>	Chairman Station, (2 Buttons, Master, for GSC-100 A) with Priority switch	<b>NEW</b>	261

**H**

<b>HM-012</b>	Hand Megaphone		326
<b>HM-012S</b>	Hand Megaphone, with siren signal		326
<b>HM-025</b>	Hand Megaphone		328
<b>HM-025S</b>	Hand Megaphone, with siren signal		328
<b>HMA-001G</b>	MCP »Amok alarm«, green	<b>NEW</b>	118
<b>HMA-001O</b>	MCP »Amok alarm«, orange		118
<b>HMA-001W</b>	MCP »Notfall«, white	<b>NEW</b>	118
<b>HMA-001Y</b>	MCP »Amok alarm«, yellow	<b>NEW</b>	118
<b>HMG-001</b>	Spare glass insert, (for MCP)		118
<b>HMH-001B</b>	MCP »House alarm«, blue		118
<b>HMS-001</b>	Spare Key, (for MCP)		118
<b>HP-101R</b>	100 V Ring Core Transformer, (100 W)		227
<b>HP-201R</b>	100 V Ring Core Transformer, (200 W)		227
<b>HS-200B</b>	Headset-Microphone, (for UB-016B/C, UWB-700E), black		277, 281, 295, 299, 303, ...
<b>HS-200S</b>	Headset-Microphone, (for UB-016B/C, UWB-700E), skin		277, 281, 295, 299, 303, ...
<b>HS-300</b>	Headset-Microphone, (for UBT-016)		285
<b>HS-400</b>	Headset-Microphone, (for WPU-200B)	<b>NEW</b>	311

**I**

<b>IMD-001A</b>	Built-in Socket Module RJ-45, (for IMP-301B)	<b>NEW</b>	90
<b>IMP-301B</b>	Input Mixing Pre-Amplifier, 19" Rack Panel, 1 RU	<b>NEW</b>	90

<b>ISP-002A</b>	Phase shifter, for double loop system	<b>NEW</b>	<b>240</b>
<b>ISV-001T</b>	Induction Loop Receiver, incl. Headphones	<b>NEW</b>	<b>237, 239</b>
<b>ISV-300A</b>	Induction Loop Amplifier, 1 RU, for areas up to 450 m <sup>2</sup>	<b>NEW</b>	<b>237</b>
<b>ISV-500A</b>	Automatic Induction Loop Amplifier, 1 RU, for areas up to 1.000 m <sup>2</sup>	<b>NEW</b>	<b>239</b>

### J

<b>JC-102FM</b>	Jack-Socket, (Mono), silver, female		<b>269</b>
<b>JC-102MM</b>	Jack-Plug, (Mono), silver, male		<b>269</b>
<b>JC-103FS</b>	Jack-Socket, (Stereo), silver, female		<b>269</b>
<b>JC-103MS</b>	Jack-Plug, (Stereo), silver, male		<b>269</b>

### K

<b>KL-012AB</b>	A/B-Ball Speaker, 2x 6 W, 100 V		<b>171</b>
<b>KL-020AB</b>	A/B-Ball Speaker, 2x 10 W, 100 V		<b>171</b>
<b>KL-200S</b>	Ball Speaker, 20 W, 100 V, black		<b>199</b>
<b>KL-200W</b>	Ball Speaker, 20 W, 100 V, white		<b>199</b>
<b>KL-510</b>	Ball Speaker, 10 W, 100 V		<b>198</b>
<b>KL-520</b>	Ball Speaker, 20 W, 100 V		<b>198</b>
<b>KL-620</b>	Ball Speaker, 20 W, 100 V		<b>198</b>
<b>KL-630</b>	Ball Speaker, 30 W, 100 V		<b>198</b>

### L

<b>LA-120</b>	Column Speaker, 20 W, 100 V		<b>200</b>
<b>LA-130</b>	Column Speaker, 30 W, 100 V		<b>200</b>
<b>LA-140</b>	Column Speaker, 40 W, 100 V		<b>200</b>
<b>LA-160</b>	Column Speaker, 60 W, 100 V		<b>200</b>
<b>LA-200B</b>	Lavalier Microphone, (for UB-016B/C, UWB-700E)	<b>277, 281, 295, 299, 303, ...</b>	
<b>LA-300</b>	Lavalier Microphone, (for UBT-016)		<b>285</b>
<b>LC-310</b>	Speaker-Chassis, 10 W, 8 ohms		<b>226</b>
<b>LC-510T</b>	Speaker-Chassis, 10 W, 8 ohms		<b>226</b>
<b>LC-610</b>	Speaker-Chassis, 10 W, 8 ohms		<b>226</b>
<b>LC-610-20</b>	Speaker-Chassis, 10 W, 20 ohms		<b>226</b>
<b>LC-640CX</b>	Speaker-Chassis, 40 W, 8 ohms, 2-way system		<b>226</b>
<b>LG-040</b>	Battery-Charger, (for SM-040/S)		<b>329</b>
<b>LPW-112R</b>	Controller-Program-Combination, up to 12 W, with Relay		<b>224</b>
<b>LPW-150R</b>	Controller-Program-Combination, up to 50 W, with Relay		<b>224</b>
<b>LR-012R</b>	Volume Control, up to 12 W, without coverage, with Relay		<b>225</b>
<b>LR-050R</b>	Volume Control, up to 50 W, without coverage, with Relay		<b>225</b>
<b>LR-0100R</b>	Volume Control, up to 100 W, without coverage, with Relay		<b>225</b>
<b>LR-112R</b>	Volume Control, up to 12 W, with Relay		<b>225</b>
<b>LR-150R</b>	Volume Control, up to 50 W, with Relay		<b>225</b>
<b>LR-1100R</b>	Volume Control, up to 100 W, with Relay		<b>225</b>
<b>LR-6030A</b>	19" Volume Control Panel, 2 RU, 6x 30 W		<b>149</b>
<b>LR-6060A</b>	19" Volume Control Panel, 2 RU, 6x 60 W		<b>149</b>
<b>LR-6120A</b>	19" Volume Control Panel, 2 RU, 6x 120 W		<b>149</b>
<b>LRM-015</b>	Volume Control, 15 W, 4-8 ohms		<b>224</b>
<b>LRM-030</b>	Volume Control, 30 W, 4-8 ohms		<b>224</b>
<b>LS-320W</b>	Column Speaker, 20/30 W, 100 V, 8 ohms, 2-way system	<b>NEW</b>	<b>201</b>

<b>LS-330 W</b>	Column Speaker, 30/45 W, 100 V, 8 ohms, 2-way system	<b>NEW</b>	201
<b>LS-340 W</b>	Column Speaker, 40/60 W, 100 V, 8 ohms, 2-way system	<b>NEW</b>	201
<b>LS-360 W</b>	Column Speaker, 60/90 W, 100 V, 8 ohms, 2-way system	<b>NEW</b>	201
<b>LST-050</b>	Mobile Horn Loaded Compression Driver, 50 W, (for POWER-PHONE)		315
<b>LST-101</b>	Floor Stand, (for LA-Series)		200
<b>LST-102</b>	Floor Stand, (for LS-Series)		201

**M**

<b>MA-1410 B</b>	10-Channel-Mixing Pre-Amplifier, 1 RU		89
<b>MB-700 W</b>	Wall Bracket, (for PB-700-Series), swivel and tilting, white		213
<b>MD-100 FD</b>	Microphone-Socket, with DIN Socket		267
<b>MD-100 FX</b>	Microphone-Socket, with XLR Socket		267
<b>ME-1 A</b>	Modular Pre-Amplifier, 1 RU		145
<b>ME-2A</b>	Modular Pre-Amplifier, 2 RU		144
<b>ME-4 A</b>	Modular Pre-Amplifier 3 RU		144
<b>MH-001</b>	Mast Holder - Type I, for hole spacing 42-62 mm	<b>NEW</b>	207
<b>MH-002</b>	Mast Holder - Type II, for hole spacing 100-142 mm	<b>NEW</b>	207
<b>MH-310</b>	Microphone Holder, for Ø 23-30 mm		267
<b>MH-800</b>	Microphone Holder, for Ø 30-36 mm		267, 278, 282, 319, 324
<b>MK-040</b>	Carriage and Storage Case, (for SM-040/S with Accessories)		329
<b>MS-050 P</b>	All Call Microphone Station, (for PSC-012A for CPA-5000 Series)		135
<b>MS-201 K</b>	Desktop Microphone, (Jack, balanced)		262
<b>MS-201 X</b>	Desktop Microphone, (XLR, balanced)		262
<b>MS-202 K</b>	Desktop Microphone, (Jack, balanced)		262
<b>MS-202 X</b>	Desktop Microphone, (XLR, balanced)		262
<b>MS-203 K</b>	Desktop Microphone, (Jack, balanced)		263
<b>MS-203 PX</b>	Desktop Microphone, (Phantom-Power 24 V DC)		263
<b>MS-203 X</b>	Desktop Microphone, (XLR, balanced)		263
<b>MT-040 L</b>	100 V Matching Transformer, 4 W		226
<b>MT-060 L</b>	100 V Matching Transformer, 6 W		226
<b>MT-101 L</b>	100 V Matching Transformer, 10 W		226
<b>MT-150 S</b>	100 V Matching Transformer, 15 W		226
<b>MT-200 L</b>	100 V Matching Transformer, 20 W		226
<b>MT-310 L</b>	100 V Matching Transformer, 30 W		226
<b>MT-600 S</b>	100 V Matching Transformer, 60 W		226
<b>MU-307 A</b>	Active Monitor Unit, 2 RU		82
<b>MV-030</b>	Desktop Amplifier, 45/30 W		141
<b>MV-060</b>	Desktop Amplifier, 90/60 W		141
<b>MXA-4120 A</b>	4-Channel Mixing Amplifier, 4x 180/120 W, 2 RU, (5 IN / 4 OUT)		49
<b>MXE-400 W</b>	Wall Microphone Station		48
<b>MXM-104</b>	Digital Microphone Station, for Remote control of 4-Speaker lines and „ALL-CALL“		46, 48
<b>MXM-104 WO</b>	Digital Microphone Station, as MXM-104 but without Interface RR-40		46, 48
<b>MXP-604 A</b>	4-Channel Mixing Pre-Amplifier, 2 RU, (6 IN / 4 OUT)		47

**N**

<b>NAP-240 A</b>	Smart Network-Audio-Player, With integrated 2x 20W Amplifier	<b>NEW</b>	109
<b>NC-111</b>	Ambient Noise Controller, 1 RU		93
<b>NH-040</b>	Battery Set, (for SM-040/S)		329
<b>NMH-100</b>	Neckworn-Microphone Holder for Hand Microphones, (for WPU-100H)	<b>NEW</b>	311
<b>NUR-302</b>	Slave Clock, Ø 300 mm, one-sided, analogue	<b>NEW</b>	97

<b>NUR-302 D</b>	Slave Clock, Ø 300 mm, double-sided, analogue, incl. Wall bracket	<b>NEW</b>	<b>97</b>
<b>NUR-402</b>	Slave Clock, Ø 400 mm, one-sided, analogue	<b>NEW</b>	<b>97</b>
<b>NUR-402 D</b>	Slave Clock, Ø 400 mm, double-sided, analogue, incl. Wall bracket	<b>NEW</b>	<b>97</b>

### O

<b>ODS-050</b>	Outdoor-Speaker, 50 W, 100 V, white, incl. Wall bracket	<b>NEW</b>	<b>211</b>
<b>ODS-100</b>	Outdoor-Speaker, 100 W, 100 V, white, incl. Wall bracket	<b>NEW</b>	<b>211</b>
<b>ODS-200</b>	Outdoor-Speaker, 200 W, 100 V, white, incl. Wall bracket	<b>NEW</b>	<b>211</b>

### P

<b>PAM-130 A</b>	›VARES-3000‹ LED-Address Module, for Microphone Stations		<b>24</b>
<b>PAS-300 B</b>	›VARES-3000‹ Bus Socket, 25-pin, for surface mounting		<b>32</b>
<b>PAX-404 A</b>	›VARES-3000‹ Audiomatrix-Module, digital		<b>23</b>
<b>PB-720 S</b>	Pro-Sound Speaker, 20 W, 100 V, 2-way system, black		<b>212</b>
<b>PB-720 W</b>	Pro-Sound Speaker, 20 W, 100 V, 2-way system, white		<b>212</b>
<b>PB-730 S</b>	Pro-Sound Speaker, 30 W, 100 V, 2-way system, black		<b>212</b>
<b>PB-730 W</b>	Pro-Sound Speaker, 30 W, 100 V, 2-way system, white		<b>212</b>
<b>PB-760 S</b>	Pro-Sound Speaker, 60 W, 100 V, 2-way system, black		<b>213</b>
<b>PB-760 W</b>	Pro-Sound Speaker, 60 W, 100 V, 2-way system, white		<b>213</b>
<b>PB-806</b>	100 V Pro-Sound Speaker, 60 W, 100 V, 2-way system		<b>215</b>
<b>PB-810</b>	100 V Pro-Sound Speaker, 100 W, 100 V, 2-way system		<b>215</b>
<b>PB-1210 S</b>	100 V Pro-Sound Speaker, 100 W, 100 V, 2-way system, black		<b>215</b>
<b>PB-1210 W</b>	100 V Pro-Sound Speaker, 100 W, 100 V, 2-way system, white		<b>215</b>
<b>PB-1220 S</b>	100 V Pro-Sound Speaker, 200 W, 100 V, 2-way system, black		<b>215</b>
<b>PB-1220 W</b>	100 V Pro-Sound Speaker, 200 W, 100 V, 2-way system, white		<b>215</b>
<b>PBA-040 W</b>	Active-Speaker-System, 2x 25 W		<b>208</b>
<b>PBA-300 B</b>	›VARES-3000‹ Bus Socket, 25-pin		<b>32</b>
<b>PBC-400 B</b>	›VARES-3000‹ Bus Module, (for PPS-024A), digital		<b>30</b>
<b>PBC-610 A</b>	›VARES-3000‹ Remote Module, digital		<b>22</b>
<b>PBE-185 A</b>	›VARES-3000‹ Bus-Extension Master-Module, digital		<b>23</b>
<b>PBE-285 A</b>	›VARES-3000‹ Bus-Extension Slave-Module, digital		<b>23</b>
<b>PBE-385 A</b>	›VARES-3000‹ Bus-Extension Slave-Module, for remote assemblies, digital		<b>23</b>
<b>PCA-300</b>	›VARES-3000‹ Main Clock Programming Adapter, (for PTC-240 D)		<b>96</b>
<b>PCM-100 C</b>	›VARES-3000‹ Chime- and Alarm Module, digital		<b>21</b>
<b>PCS-500</b>	Portable Compact-System, 600/+300 W		<b>288</b>
<b>PCS-600</b>	Portable Compact-System, 600 W		<b>289</b>
<b>PCS-1200</b>	Portable Compact-System, 1200 W		<b>290</b>
<b>PCS-1200 L</b>	Portable Compact-System, 1200 W, Horizontal-Array		<b>291</b>
<b>PD-322 A</b>	Power Distributor (AC/DC), 3 RU		<b>83</b>
<b>PDM-208 B</b>	›VARES-3000‹ Microphone Station, with LCD-Display, with 8 switches, digital		<b>25</b>
<b>PEM-008 B</b>	›VARES-3000‹ Microphone Extension Unit, with 8 buttons, digital		<b>24</b>
<b>PEQ-1131</b>	Graphic-Equalizer, 1 RU, (1 CH, 31-Band)		<b>99</b>
<b>PEU-056 B</b>	›VARES-3000‹ Extension Unit, 2 RU, digital		<b>18</b>
<b>PFH-485 A</b>	›VARES-3000‹ RS485-Hub, 5-Channel, digital		<b>23</b>
<b>PFK-101</b>	›VARES-3000‹ Connecting Cable, (for Microphone Extension Unit PEM-008B)		<b>25</b>
<b>PFK-200</b>	›VARES-3000‹ Extension Cable, (for PEU-056B and PPS-024A)		<b>18, 30</b>
<b>PFM-308 C</b>	›VARES-3000‹ Fire Brigade Microphone Station, digital		<b>26</b>
<b>PFM-330 D</b>	›VARES-3000‹ Fire Brigade Wall-Microphone Station, compl. to EN60849, digital		<b>27</b>
<b>PGA-300</b>	Plexiglas Cover, ball-throwing proof, (for UPM-300H and UPM-300V)	<b>NEW</b>	<b>113</b>
<b>PGA-400</b>	Plexiglas Cover, ball-throwing proof, (for UPM-431A and PWM-101B)		<b>111</b>

<b>PHM-485 B</b>	›VARES-3000‹ Busoption RS-485, digital		<b>31, 79</b>
<b>PHM-802 C</b>	›VARES-3000‹ Amplifier Monitoring, 1 RU, digital		<b>31, 79</b>
<b>PHS-81T30 BS</b>	EN 54-24 Alarming-Horn Speaker, 30 W, 100 V		<b>167</b>
<b>PHS-1000</b>	›VARES-3000‹ Hard- and Software Configuration		<b>35</b>
<b>PIC-208 B</b>	›VARES-3000‹ Input Module, 8 input contacts, digital		<b>21</b>
<b>PIC-216 C</b>	›VARES-3000‹ Extension Module, (for PIC-416 C), 16 monitored inputs, digital		<b>21</b>
<b>PIC-416 C</b>	›VARES-3000‹ Input Module, bus connections, 16 monitored inputs, digital		<b>21</b>
<b>PIC-516 C</b>	›VARES-3000‹ Input Module, bus connections, 16 inputs, digital		<b>21</b>
<b>PKF-024 A</b>	›VARES-3000‹ Keypadfield, 24 buttons		<b>30</b>
<b>PLC-400 A</b>	›VARES-3000‹ Display- and Button Module, digital		<b>21</b>
<b>PLE-628 A</b>	›VARES-3000‹ Display Module, digital		<b>22</b>
<b>PLT-100 A</b>	›VARES-3000‹ End-of-Line Module	<b>NEW</b>	<b>23</b>
<b>PMC-003</b>	›VARES-3000‹ Connecting Cable, 3 m, (for Microphone Stations)		<b>32</b>
<b>PMM-132 C</b>	›VARES-3000‹ Message-Module, digital		<b>21</b>
<b>PMO-350 C</b>	›VARES-3000‹ Monitoring and Measuring Module, digital		<b>22</b>
<b>PMO-400 B</b>	›VARES-3000‹ Microphone Monitoring Module, digital		<b>22</b>
<b>PMU-802 A</b>	›VARES-3000‹ Monitor Module, for 10 Power amplifiers for installation in PHM-802C		<b>31, 79</b>
<b>PMX-614</b>	Power-Mixer, 14 Channels, 2x 300 W		<b>104</b>
<b>PMX-911 R</b>	Power-Mixer, 11 Channels, 3x 300 W, 5 RU		<b>103</b>
<b>PMX-1216</b>	Power-Mixer, 16 Channels, 2x 600 W		<b>105</b>
<b>PNC-224 A</b>	›VARES-3000‹ Network Control, for networking VARES systems, digital		<b>22</b>
<b>PNF-101 C</b>	›VARES-3000‹ NF-Switch, 1-Channel	<b>NEW</b>	<b>22</b>
<b>PPS-024 A</b>	›VARES-3000‹ Program Switch Panel, 1 RU, digital		<b>30</b>
<b>PRC-008 C</b>	›VARES-3000‹ Relay Card 8 Lines, digital		<b>20</b>
<b>PRC-248 B</b>	›VARES-3000‹ Relay Card Ground Leakage, digital		<b>20</b>
<b>PRC-308 C</b>	›VARES-3000‹ Relay Card Special Functions, 8-fold, digital		<b>20</b>
<b>PRC-408 C</b>	›VARES-3000‹ Matrix-Relay Card 2x8, digital		<b>20</b>
<b>PRC-508 A</b>	›VARES-3000‹ Matrix-Relay Card 4x8, digital		<b>20</b>
<b>PRO-800</b>	Pro-Sound Speaker 100 W, 2-way system		<b>215</b>
<b>PRO-1200 S</b>	Pro-Sound Speaker 200 W, 2-way system, black		<b>215</b>
<b>PRO-1200 W</b>	Pro-Sound Speaker 200 W, 2-way system, white		<b>215</b>
<b>PRR-077 B</b>	›VARES-3000‹ DCF-Busmodul, Radio Receiver, digital		<b>29, 96</b>
<b>PRS-500 B</b>	›VARES-3000‹ TCP/IP-Telecommunication Module, digital		<b>32</b>
<b>PRS-500 NTP</b>	›VARES-3000‹ NTP-Software option for LAN-Adapter		<b>32</b>
<b>PSB-025</b>	›VARES-3000‹ Bridge Connector		<b>32</b>
<b>PSC-012 A</b>	12-Zone Paging-System, 2 RU		<b>45</b>
<b>PSM-108 B</b>	›VARES-3000‹ Microphone Fault Indicator Module, (for PDM-208B), digital		<b>24</b>
<b>PSS-224 C</b>	›VARES-3000‹ Control-Center, 2 RU		<b>19</b>
<b>PST-100</b>	Floor Stand		<b>215</b>
<b>PSU-024/24</b>	›VARES-3000‹ Power Supply, 24 VA, 24 V, 1A (for PTC-240D)		<b>29, 96</b>
<b>PSU-048/24</b>	›VARES-3000‹ Power Supply, 48 VA, 24 V, 2A		<b>32, 209</b>
<b>PSU-120/24</b>	›VARES-3000‹ Power Supply, 120 VA, 24 V, 5A		<b>32</b>
<b>PSU-240/24</b>	›VARES-3000‹ Power Supply, 240 VA, 24 V, 10A		<b>32</b>
<b>PTC-008 B</b>	›VARES-3000‹ Relay Card, (for Main Clock PTC-240D), 8-fold, digital		<b>29, 96</b>
<b>PTC-240 D</b>	›VARES-3000‹ Main Clock, 1 RU, incl. Slave Clock control, digital		<b>29, 96</b>
<b>PTM-101 B</b>	›VARES-3000‹ All Call Desktop Microphone, digital		<b>26</b>
<b>PW-006 R</b>	Program Selector Switch, without coverage, with Relay		<b>224</b>
<b>PW-106 R</b>	Program Selector Switch, with Relay		<b>224</b>
<b>PWA-510</b>	SCHOOL CUBE 500, 50 W, incl. BT-CD-Player		<b>306</b>
<b>PWA-510 S1</b>	SCHOOL CUBE 500 - SET 1		<b>307</b>
<b>PWA-510 S2</b>	SCHOOL CUBE 500 - SET 2		<b>307</b>
<b>PWA-510 S3</b>	SCHOOL CUBE 500 - SET 3		<b>307</b>
<b>PWA-510 S4</b>	SCHOOL CUBE 500 - SET 4		<b>307</b>
<b>PWA-510 S5</b>	SCHOOL CUBE 500 - SET 5		<b>307</b>

<b>PWA-510U1</b>	SCHOOL CUBE 500, 50 W, incl. BT-CD-Player, with 1-Channel UHF-Receiver		<b>306</b>
<b>PWA-510U2</b>	SCHOOL CUBE 500, 50 W, incl. BT-CD-Player, with 2-Channel UHF-Receiver		<b>306</b>
<b>PWA-730</b>	SCHOOL CUBE 700, 85 W, incl. BT-CD-Player		<b>302</b>
<b>PWA-730S1</b>	SCHOOL CUBE 700 - SET 1		<b>303</b>
<b>PWA-730S2</b>	SCHOOL CUBE 700 - SET 2		<b>303</b>
<b>PWA-730S3</b>	SCHOOL CUBE 700 - SET 3		<b>303</b>
<b>PWA-730S4</b>	SCHOOL CUBE 700 - SET 4		<b>303</b>
<b>PWA-730S5</b>	SCHOOL CUBE 700 - SET 5		<b>303</b>
<b>PWA-730U1</b>	SCHOOL CUBE 700, 85 W, incl. BT-CD-Player, with 1-Channel UHF-Receiver		<b>302</b>
<b>PWA-730U2</b>	SCHOOL CUBE 700, 85 W, incl. BT-CD-Player, with 2-Channel UHF-Receiver		<b>302</b>
<b>PWB-100S</b>	Wall Mounting Bracket, (for PB-1210S/1220S, PBA-250, PRO-1200S), black		<b>215</b>
<b>PWB-100W</b>	Wall Mounting Bracket, (for PB-1210W/1220W, PRO-1200W), white		<b>215</b>
<b>PWM-101 B</b>	›VARES-3000‹ Conversation-Unit, digital		<b>28</b>
<b>PWS-300 B</b>	›VARES-3000‹ Bus Socket, 25-pin for flush mounting		<b>32</b>
<b>PZM-310 B</b>	›VARES-3000‹ Ten-Keys Pad, (for PDM-208B), digital		<b>24</b>

### Q

<b>QDA-428 A</b>	Digital-Amplifier, 2 RU, 4x 700 W (4 ohms) / 4x 400 W (8 ohms), with DSP-Function	<b>NEW</b>	<b>73</b>
<b>QRF-115 S</b>	Pro-Sound Speaker, 600 W, Bass-Reflex-System		<b>217</b>
<b>QRF-210</b>	Pro-Sound Speaker, 220 W, 2-way system		<b>217</b>
<b>QRF-212</b>	Pro-Sound Speaker, 250 W, 2-way system		<b>217</b>
<b>QRF-212 M</b>	Pro-Sound Multifunctional Speaker, 250 W, 2-way system		<b>217</b>
<b>QRF-215</b>	Pro-Sound Speaker, 300 W, 2-way system		<b>217</b>
<b>QRF-315</b>	Pro-Sound Speaker, 250 W, 2-way system		<b>217</b>
<b>QRF-2212</b>	Pro-Sound Speaker, 300 W, 2-way system		<b>217</b>
<b>QRI-108 S</b>	Pro-Sound-Speaker, 200 W, Subwoofer	<b>NEW</b>	<b>219, 221</b>
<b>QRI-108 ST</b>	Pro-Sound-Speaker, 100 W, 100 V, Subwoofer	<b>NEW</b>	<b>219, 221</b>
<b>QRI-210</b>	Pro-Sound-Speaker, 350 W, 2-way system	<b>NEW</b>	<b>219</b>
<b>QRI-210 T</b>	Pro-Sound-Speaker, 100 W, 100 V, 2-way system	<b>NEW</b>	<b>219</b>
<b>QRI-212</b>	Pro-Sound-Speaker, 350 W, 2-way system	<b>NEW</b>	<b>219</b>
<b>QRI-212 T</b>	Pro-Sound-Speaker, 200 W, 100 V, 2-way system	<b>NEW</b>	<b>219</b>
<b>QRI-215</b>	Pro-Sound-Speaker, 500 W, 2-way system	<b>NEW</b>	<b>219</b>
<b>QRI-215 T</b>	Pro-Sound-Speaker, 200 W, 100 V, 2-way system	<b>NEW</b>	<b>219</b>
<b>QRI-401</b>	Pro-Sound-Speaker, 50 W, incl. L-shape Wall bracket	<b>NEW</b>	<b>221</b>
<b>QRI-401 T</b>	Pro-Sound-Speaker, 30 W, 100 V, incl. L-shape Wall bracket	<b>NEW</b>	<b>221</b>
<b>QRI-402</b>	Pro-Sound-Speaker, 125 W, 2-way system	<b>NEW</b>	<b>221</b>
<b>QRI-402 T</b>	Pro-Sound-Speaker, 60 W, 100 V, 2-way system	<b>NEW</b>	<b>221</b>
<b>QRI-404</b>	Pro-Sound-Speaker, 200 W, 2,5-way system	<b>NEW</b>	<b>221</b>
<b>QRI-404 T</b>	Pro-Sound-Speaker, 60 W, 100 V, 2,5-way system	<b>NEW</b>	<b>221</b>
<b>QRK-005</b>	Eyebolts Set, (for QRF-Series), contains 5 pcs. eyebolts		<b>217</b>
<b>QST-120</b>	Speaker-Stand, (for SOUND-RANGER)		<b>323</b>
<b>QST-185</b>	Speaker-Stand, up to 1,85 m height		<b>215, 217, 296, 300, 311</b>
<b>QST-200</b>	Speaker-Stand, up to 2,00 m height		<b>217</b>
<b>QWH-035</b>	Wall bracket, (for PB-1210S/1220S, PBA-250, PRO-1200S)		<b>215</b>
<b>QWH-050</b>	Wall bracket, (only for QRF-210, QRF-212 and QRF-212M)		<b>217</b>
<b>QWH-210 H</b>	Multimount-Holder, for QRI-210/T, horizontal	<b>NEW</b>	<b>219</b>
<b>QWH-210 V</b>	Multimount-Holder, for QRI-210/T, vertical	<b>NEW</b>	<b>219</b>
<b>QWH-212 H</b>	Multimount-Holder, for QRI-212/T, horizontal	<b>NEW</b>	<b>219</b>
<b>QWH-212 V</b>	Multimount-Holder, for QRI-212/T, vertical	<b>NEW</b>	<b>219</b>
<b>QWH-215 H</b>	Multimount-Holder, for QRI-215/T, horizontal	<b>NEW</b>	<b>219</b>
<b>QWH-215 V</b>	Multimount-Holder, for QRI-215/T, vertical	<b>NEW</b>	<b>219</b>

<b>QWH-402</b>	Wall Mounting Bracket, for QRI-402/T, U-Bracket	<b>NEW</b>	221
<b>QWH-404</b>	Wall Mounting Bracket, for QRI-404/T, U-Bracket	<b>NEW</b>	221

**R**

<b>RAB-008 B</b>	19" Cabinet, 8 RU	<b>NEW</b>	247
<b>RAB-014 B</b>	19" Cabinet, 14 RU		247
<b>RAB-018 B</b>	19" Cabinet, 18 RU		247
<b>RAB-024 B</b>	19" Cabinet, 24 RU		247
<b>RAB-032 B</b>	19" Cabinet, 32 RU		247
<b>RAB-040 B</b>	19" Cabinet, 40 RU		247
<b>RAF-002</b>	19" Universal Shelf, 2 RU		257
<b>RAF-003</b>	19" Universal Shelf, 3 RU		257
<b>RAU-002</b>	19" Sliding Shelf, 2 RU		257
<b>RBP-100</b>	Base Plate, (for RAB-Series)		246
<b>RC-104</b>	Ceiling Speaker, 4 W, 100 V		184
<b>RC-106</b>	Ceiling Speaker, 6 W, 100 V		184
<b>RC-110</b>	Ceiling Speaker, 10 W, 100 V		184
<b>RC-110 C</b>	Ceiling Speaker, 10 W, 100 V, 2-way system		185
<b>RC-120 C</b>	Ceiling Speaker, 20 W, 100 V, 2-way system		185
<b>RC-130 C</b>	Ceiling Speaker, 30 W, 100 V, 2-way system		185
<b>RC-210 A</b>	Snap-In Mount-Ceiling Speaker, 10 W, 100 V	<b>NEW</b>	186
<b>RC-306</b>	Ceiling Speaker, 6 W, 100 V		187
<b>RC-412 AB</b>	A/B-Ceiling Speaker, 2x 6 W, 100 V		168
<b>RC-420 AB</b>	A/B-Ceiling Speaker, 2x 10 W, 100 V		168
<b>RC-606 EN</b>	EN 54-24 Alarming-Ceiling Speaker, 6 W, 100 V, with Steel Fire Pot	<b>NEW</b>	154
<b>RC-612 EN</b>	EN 54-24 Alarming-Ceiling Speaker, 2x 6 W, 100 V, with Steel Fire Pot	<b>NEW</b>	155
<b>RCA-220 C</b>	Active-Speaker-Set 2x 10 W		209
<b>RDP-101</b>	Patch-Panel, 1HE		250, 252
<b>RDR-350</b>	Twin Wheeled Swivel Castor Set, (for RAB-Series)		246
<b>RDR-400</b>	Castor Base Set, (for RVP-Series)	<b>NEW</b>	248
<b>REF-002</b>	19" Clamping Shelf, 2 RU		257
<b>REF-003</b>	19" Clamping Shelf, 3 RU		257
<b>RFC-010</b>	19" Rack „Flight-Case“, 10 RU		254
<b>RFC-012</b>	19" Rack „Flight-Case“, 12 RU		254
<b>RFC-015</b>	19" Rack „Flight-Case“, 15 RU		254
<b>RFC-020</b>	19" Rack „Flight-Case“, 20 RU		254
<b>RFF-200</b>	Van Panel, (for RAB-Series)		246
<b>RFF-300</b>	Van Panel, (for RSS-Series)		244
<b>RFF-402 A</b>	19" Van Panel, 4 RU, (for RVP-Series)	<b>NEW</b>	248
<b>RGL-400</b>	Slide Rails, (1 pair, for RVP-Series)	<b>NEW</b>	248
<b>RGL-525</b>	Slide Rails, (1 pair, for RAB-Series)		246
<b>RGL-550</b>	Slide Rails, (1 pair, for RSS-Series)		244
<b>RJF-300</b>	Levelling feet, (for RAB-Series)		246
<b>RKB-002</b>	19" Storage Box, 2 RU		258
<b>RKB-003</b>	19" Storage Box, 3 RU		258
<b>RKM-006</b>	Cage Nut Set, M6		258
<b>RKS-006</b>	Additional Screw Set, M6		258
<b>RLF-001</b>	19" Vent Panel, 1 RU		256
<b>RLF-002</b>	19" Vent Panel, 2 RU		256
<b>RLF-003</b>	19" Vent Panel, 3 RU		256
<b>RLL-400</b>	LED-Lightning Unit, (for RVP-Series)	<b>NEW</b>	248
<b>RLP-001</b>	19" Empty Housing, 1 RU		256

<b>RLP-002</b>	19" Empty Housing, 2 RU		<b>256</b>
<b>RLP-003</b>	19" Empty Housing, 3 RU		<b>256</b>
<b>RMK-10</b>	19" Rack-Mounting-Kit, 3 RU, (for CPA-3000 Series)		<b>139</b>
<b>RMK-12</b>	19" Rack-Mounting-Kit, 8 RU, (for FMX-1202)		<b>100</b>
<b>RMK-14 P</b>	19" Rack-Mounting-Kit, 9 RU, (for PMX-614)		<b>104</b>
<b>RMK-16</b>	19" Rack-Mounting-Kit, 8 RU, (for FMX-1602)		<b>102</b>
<b>RMK-16 P</b>	19" Rack-Mounting-Kit, 9 RU, (for PMX-1216)		<b>105</b>
<b>RR-10</b>	Digital Receiver Module, (for Microphone Station VLM-105/205)		<b>130</b>
<b>RR-120</b>	Digital Receiver Module, (for Microphone Station ELM-106 and VLM-112)		<b>10, 45</b>
<b>RR-40</b>	Digital Receiver Module, (for Microphone Station MXM-104)		<b>46, 48</b>
<b>RR-60</b>	Digital Receiver Module, (for Microphone Station VLM-106/206 or Control Panel VPM-6000U)		<b>114, 128</b>
<b>RRP-101</b>	Implementation-Panel, 1HE		<b>250, 252</b>
<b>RSC-008 A</b>	Relay Board, for speaker line monitoring, 8-fold, digital		<b>81</b>
<b>RSC-132 A</b>	Speaker Line Monitoring Unit, 1 RU, digital		<b>81</b>
<b>RSD-301</b>	Sound-Dome Ceiling Speaker 30 W, 100 V, 2-way system		<b>183</b>
<b>RSD-601</b>	Sound-Dome Ceiling Speaker 60 W, 100 V, 2-way system		<b>183</b>
<b>RSG-001</b>	19" Protective Grid, 1 RU		<b>256</b>
<b>RSG-002</b>	19" Protective Grid, 3 RU		<b>256</b>
<b>RSG-003</b>	19" Protective Grid, 3 RU		<b>256</b>
<b>RSL-002</b>	19" Drawer, 2 RU		<b>257</b>
<b>RSL-003</b>	19" Drawer, 3 RU		<b>257</b>
<b>RSS-5524</b>	19" Swing Frame Cabinet, 24 RU		<b>245</b>
<b>RSS-5530</b>	19" Swing Frame Cabinet, 30 RU		<b>245</b>
<b>RSS-5540</b>	19" Swing Frame Cabinet, 40 RU		<b>245</b>
<b>RST-5500</b>	Base, (for RSS-Series)		<b>244</b>
<b>RTB-008 B</b>	Plexiglass Door, 8 RU, (for RAB-008B)	<b>NEW</b>	<b>247</b>
<b>RTB-014 B</b>	Plexiglass Door, 14 RU, (for RAB-014B)		<b>247</b>
<b>RTB-018 B</b>	Plexiglass Door, 18 RU, (for RAB-018B)		<b>247</b>
<b>RTB-024 B</b>	Plexiglass Door, 24 RU, (for RAB-024B)		<b>247</b>
<b>RTB-032 B</b>	Plexiglass Door, 32 RU, (for RAB-032B)		<b>247</b>
<b>RTB-040 B</b>	Plexiglass Door, 40 RU, (for RAB-040B)		<b>247</b>
<b>RTC-200</b>	Thermostat for Rail Mounting, (for RFF-200/RFF-300)		<b>246</b>
<b>RTS-024</b>	Plexiglass Door, 24 RU, (for RSS-5524)		<b>245</b>
<b>RTS-030</b>	Plexiglass Door, 30 RU, (for RSS-5530)		<b>245</b>
<b>RTS-040</b>	Plexiglass Door, 40 RU, (for RSS-5540)		<b>245</b>
<b>RU-203 T</b>	19" Rack Mounting Kit, 1 RU, (for AS-200B with TNC-Connector)		<b>280</b>
<b>RU-401</b>	19" Rack Mounting Kit, 1 RU, (for UWR-701E)		<b>282</b>
<b>RU-401 T</b>	19" Rack Mounting Kit, 1 RU, (for UWR-701E with TNC-Connector)		<b>282</b>
<b>RU-501 T</b>	19" Rack Mounting Kit, 1 RU, (for UWT-016)		<b>286</b>
<b>RU-502 T</b>	19" Rack Mounting Kit, 1 RU, (for UR-016B/C)		<b>278</b>
<b>RUS-100</b>	Castor Case, (for RFC-Series)		<b>254</b>
<b>RUS-101</b>	Castor Case, (for WFC-Series)		<b>255</b>
<b>RVC-001 A</b>	Volume Control, 1-fold, (for RVC-201 A)	<b>NEW</b>	<b>115</b>
<b>RVC-002 A</b>	Volume Control, 2-fold, (for RVC-201 A)	<b>NEW</b>	<b>115</b>
<b>RVC-201 A</b>	Remote Volume Control, control electronics, 2-Channel	<b>NEW</b>	<b>115</b>
<b>RVP-015</b>	19" Cabinet, (15 RU), with Plexiglass Door	<b>NEW</b>	<b>249</b>
<b>RVP-018</b>	19" Cabinet, (18 RU), with Plexiglass Door	<b>NEW</b>	<b>249</b>
<b>RVP-022</b>	19" Cabinet, (22 RU), with Plexiglass Door	<b>NEW</b>	<b>249</b>
<b>RVP-027</b>	19" Cabinet, (27 RU), with Plexiglass Door	<b>NEW</b>	<b>249</b>
<b>RVP-032</b>	19" Cabinet, (32 RU), with Plexiglass Door	<b>NEW</b>	<b>249</b>
<b>RVP-037</b>	19" Cabinet, (37 RU), with Plexiglass Door	<b>NEW</b>	<b>249</b>
<b>RVP-042</b>	19" Cabinet, (42 RU), with Plexiglass Door	<b>NEW</b>	<b>249</b>
<b>RXP-081</b>	19" XLR Rack Panel, 1 RU, for 8 XLR-sockets		<b>256</b>

**S**

<b>SA-090</b>	Microphone boom, (matte black)			<b>266</b>
<b>SC-104</b>	Ceiling Speaker, 4 W, 100 V, square			<b>191</b>
<b>SC-106</b>	Ceiling Speaker, 6 W, 100 V, square			<b>191</b>
<b>SC-106EN-1</b>	EN 54-24 Alarming-Ceiling Speaker, 6 W, 100 V, with dust cover			<b>157</b>
<b>SC-110</b>	Ceiling Speaker, 10 W, 100 V, square			<b>191</b>
<b>SC-110C</b>	Ceiling Speaker, 10 W, 100 V, 2-way system, square			<b>191</b>
<b>SC-120C</b>	Ceiling Speaker, 20 W, 100 V, 2-way system, square			<b>191</b>
<b>SC-130C</b>	Ceiling Speaker, 30 W, 100 V, 2-way system, square			<b>191</b>
<b>SC-400WT</b>	Ceiling Speaker, 60 W, 100 V, 2-way system, square			<b>190</b>
<b>SC-512AB</b>	A/B-Ceiling Speaker, 2x 6 W, 100 V, square			<b>169</b>
<b>SC-512EN-1</b>	EN 54-24 Alarming-Ceiling Speaker, 6 W, 100 V, with dust cover			<b>156</b>
<b>SC-520AB</b>	A/B-Ceiling Speaker, 2x 10 W, 100 V, square			<b>169</b>
<b>SCS-106</b>	Ceiling Speaker, 6 W, 100 V			<b>193</b>
<b>SCS-110</b>	Ceiling Speaker, 10 W, 100 V			<b>193</b>
<b>SCS-110C</b>	Ceiling Speaker, 10 W, 100 V, 2-way system			<b>193</b>
<b>SCS-120C</b>	Ceiling Speaker, 20 W, 100 V, 2-way system			<b>193</b>
<b>SCS-512AB</b>	A/B-Ceiling Speaker, 2x 6 W, 100 V			<b>170</b>
<b>SCS-520AB</b>	A/B-Ceiling Speaker, 2x 10 W, 100 V			<b>170</b>
<b>SD-120</b>	SOUND-DESK, max. 120 W, (without UHF-Receiver), black			<b>318</b>
<b>SD-120U1</b>	SOUND-DESK, max. 120 W, (with integrated 1-Channel UHF-Receiver), black			<b>318</b>
<b>SD-120U2</b>	SOUND-DESK, max. 120 W, (with integrated 2-Channel UHF-Receiver), black			<b>318</b>
<b>SERVICE-LST</b>	Service-Upgrade, (for WPP-Series)			<b>315</b>
<b>SF-100</b>	Gooseneck Flange			<b>266</b>
<b>SFX-301</b>	Microphone Adapter, with Mounting flange, XLR-Socket	<b>NEW</b>		<b>233</b>
<b>SFX-302</b>	Microphone Adapter, with Threaded bolt (M10), XLR-Socket	<b>NEW</b>		<b>233</b>
<b>SH-150</b>	Gooseneck			<b>266</b>
<b>SH-300</b>	Gooseneck			<b>266</b>
<b>SH-301 X</b>	Gooseneck			<b>266</b>
<b>SK-120</b>	Carriage and Storage Case, (for SOUND-RANGER)			<b>323</b>
<b>SM-025</b>	Shoulder Megaphone, max. 25 W			<b>328</b>
<b>SM-025S</b>	Shoulder Megaphone, max. 25 W, with siren signal			<b>328</b>
<b>SM-040S</b>	POWER-Shoulder Megaphone, max. 40 W, with siren signal			<b>329</b>
<b>SPC-104F</b>	Speaker Installation Socket, (4-Pol.), female			<b>270</b>
<b>SPC-108F</b>	Speaker Installation Socket, (8-Pol.), female			<b>270</b>
<b>SPC-204F</b>	Speaker-Socket, (4-Pol.), female			<b>271</b>
<b>SPC-204M</b>	Speaker-Plug, (4-Pol.), male			<b>271</b>
<b>SPC-208M</b>	Speaker-Plug, (8-Pol.), male			<b>271</b>
<b>SPJ-52WHBS</b>	EN 54-24 Alarming-Double-Direction Soundprojector, 20 W, 100 V			<b>164</b>
<b>SPJ-53WHBS</b>	EN 54-24 Alarming-Soundprojector, 20 W, 100 V			<b>165</b>
<b>SR-120</b>	SOUND-RANGER, max. 120 W, (without UHF-Receiver), black			<b>318, 322</b>
<b>SR-120U1</b>	SOUND-RANGER, max. 120 W, (with integrated 1-Channel UHF-Receiver), black			<b>318, 322</b>
<b>SR-120U2</b>	SOUND-RANGER, max. 120 W, (with integrated 2-Channel UHF-Receiver), black			<b>322</b>
<b>SRC-606EN</b>	EN 54-24 Alarming-Ceiling Speaker, 6 W, 100 V, with Plastic cover	<b>NEW</b>		<b>152</b>
<b>SRC-612EN</b>	EN 54-24 Alarming-Ceiling Speaker, 2x 6 W, 100 V, with Plastic cover	<b>NEW</b>		<b>153</b>
<b>SS-220P</b>	Speaker Selector, 2 RU			<b>92</b>
<b>ST-030</b>	Floor Stand, (for POWER-PHONE)			<b>316</b>
<b>ST-104</b>	Megaphone Stand, (for SM-040/S)			<b>329</b>
<b>ST-120</b>	Floor Stand, (for SOUND-RANGER)			<b>318, 323</b>
<b>SW-004</b>	Sound Panel Speaker, 4 W, 100 V, with „twin-cone“-Chassis			<b>192</b>
<b>SW-006</b>	Sound Panel Speaker, 6 W, 100 V, with „twin-cone“-Chassis			<b>192</b>
<b>SW-010</b>	Sound Panel Speaker, 10 W, 100 V, with „twin-cone“-Chassis			<b>192</b>

<b>SW-104</b>	Sound Panel Speaker, 4 W, 100 V			<b>192</b>
<b>SW-106</b>	Sound Panel Speaker, 6 W, 100 V			<b>192</b>
<b>SW-110</b>	Sound Panel Speaker, 10 W, 100 V			<b>192</b>
<b>SW-210C</b>	Sound Panel Speaker, 10 W, 100 V, 2-way system			<b>192</b>
<b>SW-220C</b>	Sound Panel Speaker, 20 W, 100 V, 2-way system			<b>192</b>
<b>SW-230C</b>	Sound Panel Speaker, 30 W, 100 V, 2-way system			<b>192</b>

### T

<b>TIF-101 C</b>	Telefon Interface, analogue, with 1 change over contact and all call	<b>NEW</b>		<b>117</b>
<b>TIF-404 C</b>	Telefon Interface, analogue, with 4 change over contacts and all call			<b>117</b>
<b>TP-10 USB</b>	FM/AM Tuner Module, for all Small Centrals with Module compartment or ME-2A/4A	<b>NEW</b>	<b>123, 125, 127, ... 143, 144</b>	
<b>TS-020</b>	Desktop Microphone Stand			<b>267</b>
<b>TS-040</b>	Desktop Microphone Stand			<b>267</b>
<b>TS-060</b>	Desktop Microphone Stand, with boom arm			<b>267, 319, 324</b>
<b>TSE-203</b>	Transformer-balanced input, retrofit kit for Amplifier			<b>51</b>
<b>TU-110 RDS</b>	19" FM/AM Tuner, 1 RU, with RDS			<b>146</b>

### U

<b>UB-016 B</b>	UHF-Bodypack, 16 Frequencies, (863-865 MHz)	<b>NEW</b>	<b>277, 295, 299, 303, ...</b>	
<b>UB-016 C</b>	UHF-Bodypack, 16 Frequencies, (620-640 MHz)	<b>NEW</b>		<b>277</b>
<b>UB-100 A</b>	USB/SD-Card/BT Player-Module, (for UPM-431A), incl. Remote	<b>NEW</b>		<b>111</b>
<b>UBA-002</b>	Battery-Set AAA, 2x NiMH 1,2 V, (for UBR/UBT-016)			<b>286</b>
<b>UBB-002</b>	Battery-Set AA, 2x NiMH 1,2 V, (for UBH-016)			<b>286</b>
<b>UBH-016</b>	UHF-Hand Microphone, 16 Frequencies, (863-865 MHz)			<b>285</b>
<b>UBR-016</b>	UHF-Receiver, 16 Frequencies, (863-865 MHz), with leather Case			<b>285</b>
<b>UBT-016</b>	UHF-Bodypack, 16 Frequencies, (863-865 MHz), with leather Case			<b>285</b>
<b>UH-016 B</b>	UHF-Hand Microphone, 16 Frequencies, (863-865 MHz)	<b>NEW</b>	<b>277, 295, 299, 303, ...</b>	
<b>UH-016 C</b>	UHF-Hand Microphone, 16 Frequencies, (620-640 MHz)	<b>NEW</b>		<b>277</b>
<b>UPG-300</b>	Flush-Mount Housing, (for UPM-300H and UPM-300V)	<b>NEW</b>		<b>113</b>
<b>UPG-400</b>	Flush-Mount Housing, (for PWM-101B and UPM-431A)			<b>28, 30, 111</b>
<b>UPG-600</b>	Flush-Mount Housing, (for VPM-6000U)	<b>NEW</b>		<b>114</b>
<b>UPM-002 B</b>	Button Module, 2-fold, (for UPM-300H)	<b>NEW</b>		<b>113</b>
<b>UPM-300 H</b>	3-Channel Mixer for mounted switch boxes, (horizontal)			<b>113, 209</b>
<b>UPM-300 V</b>	3-Channel Mixer for mounted switch boxes, (vertical)			<b>113, 209</b>
<b>UPM-431 A</b>	7-Channel-Mixing Control Panel	<b>NEW</b>		<b>111</b>
<b>UR-016 B</b>	4-tray Modul carrier, 16 Frequencies (863-865 MHz), for up to 4 pcs. URM-016B	<b>NEW</b>		<b>276</b>
<b>UR-016 C</b>	4-tray Modul carrier, 16 Frequencies (620-640 MHz), for up to 4 pcs. URM-016C	<b>NEW</b>		<b>276</b>
<b>URM-016 B</b>	UHF-Receiver Module, 16 Frequencies (863-865 MHz), for UR-016B	<b>NEW</b>		<b>276</b>
<b>URM-016 C</b>	UHF-Receiver Module, 16 Frequencies (620-640 MHz), for UR-016C	<b>NEW</b>		<b>276</b>
<b>UWB-700 E</b>	UHF-Bodypack, 700 Frequencies (630-660 MHz)	<b>NEW</b>		<b>281</b>
<b>UWH-701 E</b>	UHF-Hand Microphone, 700 Frequencies (630-660 MHz)	<b>NEW</b>		<b>281</b>
<b>UWR-701 E</b>	UHF-Receiver, 700 Frequencies (630-660 MHz)	<b>NEW</b>		<b>280</b>
<b>UWT-016</b>	UHF-Transmitter, 16 Frequencies (863-865 MHz)			<b>285</b>

### V

<b>VC-030</b>	Carriage and Storage Bag, (for SCHOOL-CUBE 500)			<b>307</b>
<b>VC-070</b>	Carriage and Storage Bag, (for SCHOOL-CUBE 700)			<b>303</b>
<b>VC-100 B</b>	Carriage and Storage Cover, (for DIGITAL SOUND-CENTER 100)			<b>299</b>

<b>VC-110</b>	Carriage and Storage Cover, (for SOUND-RANGER)		<b>323</b>
<b>VC-120</b>	Venyl-Cover, (for SOUND-DESK), with integrated accessories bag		<b>319</b>
<b>VC-150</b>	Carriage and Storage Cover, (for DIGITAL SOUND-CENTER 150)		<b>295</b>
<b>VCF-020 A</b>	›VARES-1000‹ Housing for ESM-020 H, (without mounting panel)		<b>13</b>
<b>VLA-120 C</b>	Small Central Unit „VARIO-LINE“, 180/120 W, 3 RU, 5 Speaker lines		<b>131</b>
<b>VLA-240 C</b>	Small Central Unit „VARIO-LINE“, 360/240 W, 3 RU, 5 Speaker lines		<b>131</b>
<b>VLA-601 A</b>	10-ZONES „VARIO-LINE“, 900/600 W, 3 RU, 10 Speaker lines	<b>NEW</b>	<b>125</b>
<b>VLA-602 A</b>	20-ZONES „VARIO-LINE“, 900/600 W, 3 RU, 20 Speaker lines	<b>NEW</b>	<b>123</b>
<b>VLE-004</b>	Function Extension Module, (for VLM-105/106/112)		<b>45, 128, 130</b>
<b>VLM-100 A</b>	Digital Microphone Station		<b>46, 48, 128, 130</b>
<b>VLM-105</b>	Digital Microphone Station		<b>130</b>
<b>VLM-105 WO</b>	Digital Microphone Station, (without RR-10)		<b>130</b>
<b>VLM-106</b>	Digital Microphone Station		<b>128</b>
<b>VLM-106 WO</b>	Digital Microphone Station, (without RR-60)		<b>128</b>
<b>VLM-112</b>	Digital Microphone Station		<b>45</b>
<b>VLM-112 WO</b>	Digital Microphone Station, (without RR-120)		<b>45</b>
<b>VLM-200 A</b>	All-Call Microphone Station, (for VLA-601A and VLA-602A)		<b>122, 124</b>
<b>VLM-205</b>	Digital Microphone Station		<b>130</b>
<b>VLM-205 WO</b>	Digital Microphone Station, (without RR-10)		<b>130</b>
<b>VLM-206</b>	Digital Microphone Station		<b>128</b>
<b>VLM-206 WO</b>	Digital Microphone Station, (without RR-60)		<b>128</b>
<b>VLM-210 A</b>	Microphone Station 10 Lines, (for VLA-601A)	<b>NEW</b>	<b>125</b>
<b>VLM-220 A</b>	Microphone Station 20 Lines, (for VLA-602A)		<b>123</b>
<b>VL-Service 01</b>	0-dB Adjustment, power extension, (for „VARIO-LINE“)		<b>133</b>
<b>VL-Service 02</b>	Installation PCM-100, (for „VARIO-LINE“)		<b>133</b>
<b>VL-Service 03</b>	Input for External Control, (for „VARIO-LINE“)		<b>133</b>
<b>VL-Service 05</b>	Potential Free Contacts, (for „VARIO-LINE“)		<b>133</b>
<b>VL-Service 06</b>	Ground Leak Monitoring, (for „VARIO-LINE“)		<b>133</b>
<b>VL-Service 07</b>	Microphone Station Extension, (for „VARIO-LINE“)		<b>133</b>
<b>VLZ-6120 A</b>	Small Central Unit „VARIO-LINE“, 180/120 W, 3 RU, 6 Speaker lines		<b>127</b>
<b>VLZ-6240 A</b>	Small Central Unit „VARIO-LINE“, 360/240 W, 3 RU, 6 Speaker lines		<b>127</b>
<b>VLZ-6480 A</b>	Small Central Unit „VARIO-LINE“, 720/480 W, 3 RU, 6 Speaker lines		<b>127</b>
<b>VLZ-6600 A</b>	Small Central Unit „VARIO-LINE“, 900/600 W, 3 RU, 6 Speaker lines		<b>127</b>
<b>VMF-020 A</b>	›VARES-1000‹ Mounting Panel, (for ESM-020H)		<b>13</b>
<b>VPM-6000 U</b>	4-Channel Mixing Pre-Amplifier Control Panel, (for VLZ-Series), with USB-Interface	<b>NEW</b>	<b>114</b>
<b>VS-050 P</b>	All-Call Microphone Station, (for PSC-012A)		<b>45</b>

## W

<b>WFC-010 U</b>	19" Angle „U-Flight-Case“, 10 RU		<b>255</b>
<b>WFC-012 U</b>	19" Angle „U-Flight-Case“, 12 RU		<b>255</b>
<b>WFC-015 U</b>	19" Angle „U-Flight-Case“, 15 RU		<b>255</b>
<b>WFC-020 U</b>	19" Angle „U-Flight-Case“, 20 RU		<b>255</b>
<b>WHM-025</b>	Hand Megaphone, max. 25 W, light blue		<b>327</b>
<b>WHM-025 S</b>	Hand Megaphone, max. 25 W, red, with siren		<b>327</b>
<b>WPP-050 U1</b>	Wireless POWER-PHONE, 50 W, with integrated 1-Channel UHF-Receiver		<b>314</b>
<b>WPP-050 U2</b>	Wireless POWER-PHONE, 50 W, with integrated 2-Channel UHF-Receiver		<b>314</b>
<b>WPS-220 A</b>	Wireless Procession-System, 2x 20 W, with integrated 1-Channel UHF-Receiver	<b>NEW</b>	<b>310</b>
<b>WPU-100 H</b>	UHF-Hand Microphone, (for WPS-220A)	<b>NEW</b>	<b>311</b>
<b>WPU-200 B</b>	UHF-Bodypack, (for WPS-220A)	<b>NEW</b>	<b>311</b>
<b>WSH-009</b>	19" Wall Swing Frame Cabinet, 9 RU, with glass door, load capacity up to 100 kg		<b>253</b>
<b>WSH-012</b>	19" Wall Swing Frame Cabinet, 12 RU, with glass door, load capacity up to 100 kg		<b>253</b>
<b>WSH-016</b>	19" Wall Swing Frame Cabinet, 16 RU, with glass door, load capacity up to 100 kg		<b>253</b>

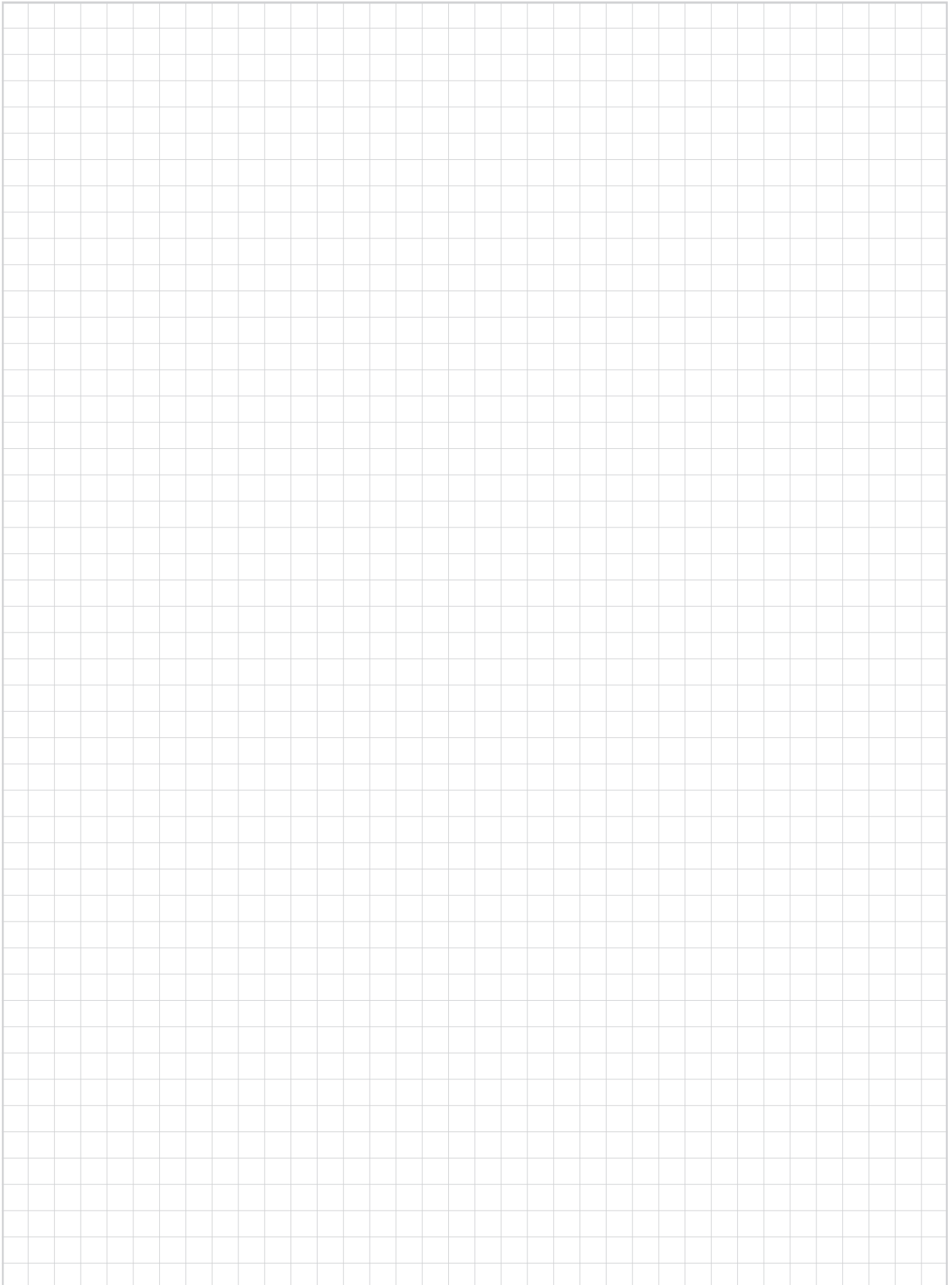
<b>WSH-115</b>	Wide Horn Speaker, 15 W, 100 V		<b>202</b>
<b>WSL-015</b>	Wide Horn Speaker, 15 W, 8 ohms		<b>202</b>
<b>WSS-006</b>	19" Wall Swing Frame Cabinet, 6 RU, with glass door		<b>251</b>
<b>WSS-009</b>	19" Wall Swing Frame Cabinet, 9 RU, with glass door		<b>251</b>
<b>WSS-012</b>	19" Wall Swing Frame Cabinet, 12 RU, with glass door		<b>251</b>
<b>WSS-015</b>	19" Wall Swing Frame Cabinet, 15 RU, with glass door		<b>251</b>

### X

<b>XC-1030</b>	Xorva ›C 1‹ Column Speaker, 30 W, 100 V	<b>NEW</b>	<b>234</b>
<b>XC-1045</b>	Xorva ›C 1‹ Column Speaker, 45 W, 100 V	<b>NEW</b>	<b>234</b>
<b>XC-1060</b>	Xorva ›C 1‹ Column Speaker, 60 W, 100 V	<b>NEW</b>	<b>234</b>
<b>XC-1090</b>	Xorva ›C 1‹ Column Speaker, 90 W, 100 V	<b>NEW</b>	<b>234</b>
<b>XC-1120</b>	Xorva ›C 1‹ Column Speaker, 120 W, 100 V	<b>NEW</b>	<b>234</b>
<b>XC-4030</b>	Xorva ›C 4‹ Column Speaker, 30 W, 100 V	<b>NEW</b>	<b>235</b>
<b>XC-4040</b>	Xorva ›C 4‹ Column Speaker, 40 W, 100 V	<b>NEW</b>	<b>235</b>
<b>XC-4060</b>	Xorva ›C 4‹ Column Speaker, 60 W, 100 V	<b>NEW</b>	<b>235</b>
<b>XC-4080</b>	Xorva ›C 4‹ Column Speaker, 80 W, 100 V	<b>NEW</b>	<b>235</b>
<b>XC-4100</b>	Xorva ›C 4‹ Column Speaker, 100 W, 100 V	<b>NEW</b>	<b>235</b>
<b>XLR-103WF</b>	XLR-Angle Socket, silver, female		<b>268</b>
<b>XLR-103WM</b>	XLR-Angle Plug, silver, male		<b>268</b>
<b>XLR-203F</b>	XLR-Socket, silver, female		<b>268</b>
<b>XLR-203M</b>	XLR-Plug, silver, male		<b>268</b>
<b>XLR-303F</b>	XLR-Socket, black, female		<b>268</b>
<b>XLR-303M</b>	XLR-Plug, black, male		<b>268</b>
<b>XLR-403F</b>	XLR-Installation-Socket, black, female		<b>270</b>
<b>XLR-503F</b>	XLR-Installation-Socket, black, female		<b>270</b>
<b>XLR-503FL</b>	XLR-Soldering-Installation Plug, black, female		<b>270</b>
<b>XLR-503M</b>	XLR-Installation-Plug, black, male		<b>270</b>
<b>XSS-020</b>	Xorva ›S‹ Speaker, 20 W, passive, 8 ohms, incl. Wall bracket	<b>NEW</b>	<b>210</b>
<b>XSS-020A</b>	Xorva ›S‹ Speaker, 20 W, active, 4 ohms, incl. Wall bracket	<b>NEW</b>	<b>210</b>
<b>XSS-020T</b>	Xorva ›S‹ Speaker, 20 W, 100 V, incl. Wall bracket	<b>NEW</b>	<b>210</b>
<b>XSS-040A</b>	Xorva ›S‹ Speaker, 40 W, active, 4 ohms, incl. Wall bracket	<b>NEW</b>	<b>210</b>
<b>XSS-040T</b>	Xorva ›S‹ Speaker, 40 W, 100 V, incl. Wall bracket	<b>NEW</b>	<b>210</b>

### Z

<b>ZS-3</b>	Digital Impedance Tester, with Accessories and storage bag	<b>NEW</b>	<b>223</b>
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