R·C·S ®
AUDIO-SYSTEMS

EN
54-16
certified

EN
54-4
certified

Compatible with:
VARES 2000
VARES LOOP

VARES 1500
NETWORK VOICE EVACUATION CENTER

RCS

VOICE ALARMING SYSTEM
»ONE-BOX-DESIGN«

THE SIMPLE »ALL-IN-ONE« SOLUTION

RCS

VA-SYSTEM ›ALL-IN-ONE‹ VARES 1500

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

AT DIFFERENT LOCATIONS

In the device:
- Control unit
- Up to six power amplifier + Backup amplifier
- Emergency power supply
- Fire brigade call station
- Switching module
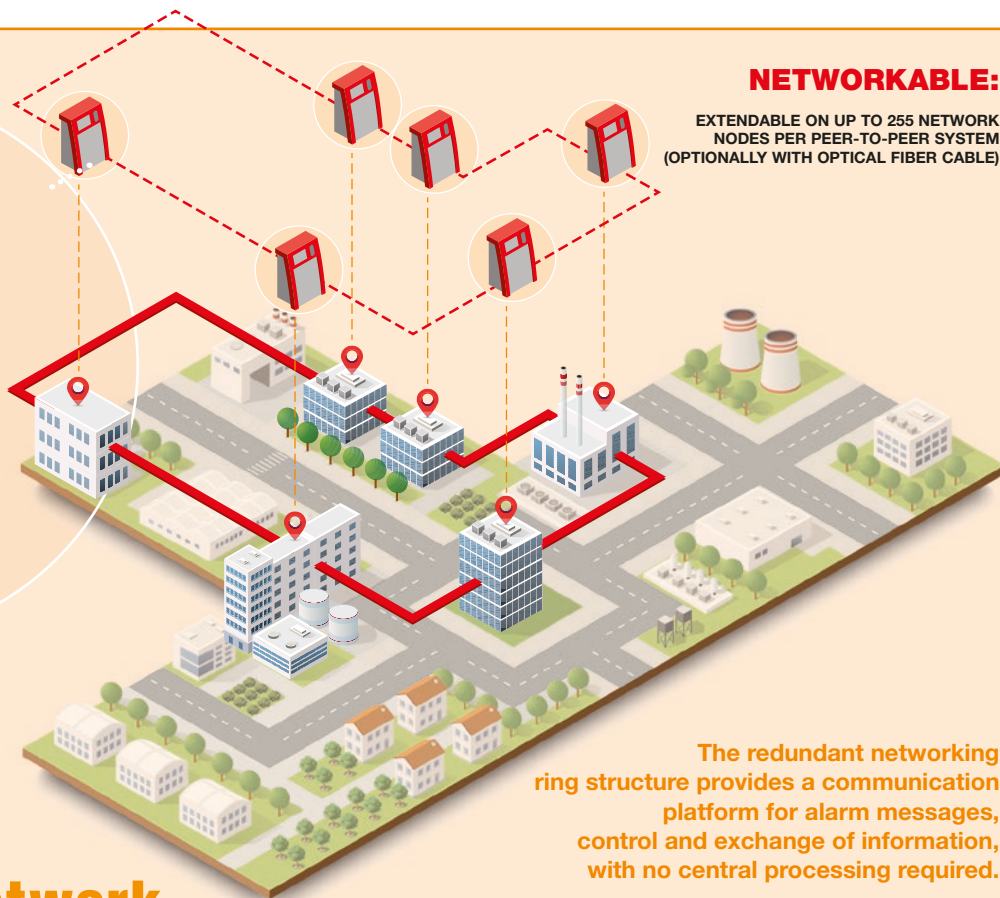
NETWORKABLE:

EXTENDABLE ON UP TO 255 NETWORK
NODES PER PEER-TO-PEER SYSTEM
(OPTIONALLY WITH OPTICAL FIBER CABLE)

The redundant networking
ring structure provides a communication
platform for alarm messages,
control and exchange of information,
with no central processing required.

SAA network

For planners and engineering companies

COST SAVINGS

Due to the decentralized system version, it is possible to use one device VARES-1500 pro partial area or fire compartment.

The power network within the respective fire section requires no interpretation in function maintenance, as there is no signal distribution across all fire sections.

Advantage 1: Cost savings through the omission of a line network in functional integrity

Advantage 2: Old and listed buildings with an existing line network can be integrated into a modern alerting concept

TIME SAVINGS

For partial renovations, the use of the new VARES-1500 system can modernize only the renovated section.

Non-renovated areas do not need to be fully considered in terms of planning, hardware and installation.

SAFETY

The VARES-1500 system offers complete safety.

Even in the case of disruption within the redundant network, the distributed systems in the building continue to operate independently thanks to the decentralized alarming concept; the area-by-stage alerting remains ensured.

VARES 1500 ›ALL-IN-ONE‹ VA-SYSTEM

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

R·C·S

MADE IN EUROPE

NEW

+ **Compact ›all-in-one‹ solution for small to medium applications**

+ **Up to 36 lines (1-Channel) or 18 lines (2-Channel) expandable per system**

+ **Monitoring all functions to maintain the Voice Alarm System active**

Description

The voice alarm system VARES-1500 is a comprehensive „all-in-one" concept, that combines the simplicity of a standalone conventional system with the benefits of the global network structure.

Depending on the model (see technical data), the decentralized system contains the necessary routing for up to 6 individual zones or 3 A/B lines. Expandable up to 36 lines (in 1-CH operation) or 18 lines (in 2-CH operation) per system, with 600 W/300 W and an additional active backup amplifier. With up to 255 closed control and display units in a global network.

Please consider the following features:

- Up to 255 network nodes per system with peer-to-peer-system-redundant (ring technology)
- Mains voltage and battery monitoring
- Loop-technique and EOL (end-of-line) support
- Amplifier and microphone monitoring
- Text module & digital announcements memory
- 2 antiparallel 12 kHz live audio streams: Priority channel with second and / or backup channel

- 6 monitored inputs for e.g. manual call points or FACP
- Max. Distance between nodes: 250m (standard Cat5 cable), 2000m optical fiber cable, optional)
- Nearly unlimited network loop length
- Pre- and post-processing software modules (such as volume controls, routing, mixing, switching, and prioritization)

★

Technical data	NVC-200 A	NVC-400 A	NVC-600 A
Amplifier Modules (Class-D)	2x 100W (200W)	4x 100W (400W)	6x 100W (600W)
Loudspeaker circuits expandable (with NLE-406 A, 1-CH) expandable (with NLE-406 A, 2-CH)	2 (or 1 A/B) 12 (or 6 A/B) 6 (or 3 A/B)	4 (or 2 A/B) 24 (or 12 A/B) 12 (or 6 A/B)	6 (or 3 A/B) 36 (or 18 A/B) 18 (or 9 A/B)
Inputs (audio)	1x Audio 0dB, 1x fire brigade remote microphone		
Inputs (monitored)	6x alarm, 1x mute and 1x reset contact		
Inputs (unmonitored)	8x unmonitored input contacts		
Output contacts	1x alarm, 1x fault contact (relay), 8x mandatory call output (open collector)		
Outputs 100V (monitored with EOL)	2x 100W (RMS)	4x 100W (RMS)	6x 100W (RMS)
Outputs 100V (optionally bridged)	1x 200W (RMS)	2x 200W (RMS)	3x 200W (RMS)
Power supply	230V AC		
Emergency power supply	24 V DC		
Dimensions (W x H x D)	520 x 800 x 280 mm		
Weight (without battery)	approx. 25 kg	approx. 27 kg	approx. 29 kg

Model designations

›VARES-1500‹ Network Voice-Evacuation Center, 200 W, (1 power amplifier 2x100W and Backup amplifier 2x100W) . . . . **NVC-200 A**
›VARES-1500‹ Network Voice-Evacuation Center, 400 W, (2 power amplifier 2x100W and Backup amplifier 2x100W) . . . . **NVC-400 A**
›VARES-1500‹ Network Voice-Evacuation Center, 600 W, (3 power amplifier 2x100W and Backup amplifier 2x100W) . . . . **NVC-600 A**

─── optional Accessories: ───

›VARES-1500‹ 2-Channel Amplifier module, 2x 100W, (Retrofit kit for NVC-Series) . . . . **NDA-200 A**
›VARES-1500‹ 2-Channel Backup Amplifier module, 2x 100 W, (Retrofit kit for NVC-Series) . . . . **NDA-200 H**

Lead acid battery set, for internal operation (26 Ah); weight: 18 kg. **BA-052**
Lead acid battery set, for internal operation (45 Ah); weight: 28,6 kg. **BA-080**

Input-/Output modules
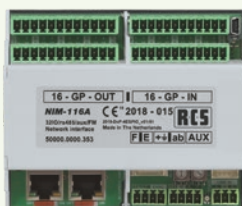
Fiber optic converter module

- Module for DIN rail mounting
- Connection for multimode fiber optic cable (820 nm / SC plug / double fiber)
- Max. Distance between the modules 2.000 m

FO Converter, for network . . . . **NOM-204 A**
Dimensions (WxHxD): 36 x 90 x 62 mm

Network interface (monitored)

- Module for DIN rail mounting
- 16 monitored inputs (normally open or normally closed)
- 16 outputs (per output individually as normally open or normally closed), switching capacity 40 V / 150 mA per channel
- 1 AUX input
- 1 error contact (NC)
- 1 alarm contact (NO)

Input-/Outputmodule . . . . **NIM-116 A**
for monitored inputs and outputs; Dimensions (WxHxD): 118 x 90 x 65 mm

FACP/VAS Interface

- Module for DIN rail mounting
- FACP (BMZ)/VAS according to VDE 0833-4 Appendix G
- Control voltage of fire alarm system
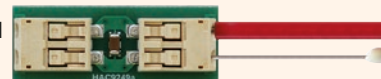- Resistor-monitored normally open contact for faults in VAS

FACP/VAS Interface, according to VDE 0833-4 . . . . **PIC-101 A**
Dimensions (WxHxD): 36 x 90 x 62 mm

Line modules

End-of-Line module

- The end-of-line module (EOL) monitors the conduction path for short circuits, disruption and ground faults. The module will be at the end of the line at the last speaker connected.
- Adjustable total power of the monitored loudspeaker line from 10 to 200 W.
- Test noise monitored with 20 KHz.

End-of-Line Modul . . . . **NLM-200 A**
Dimensions (WxHxD): 40 x 20 x 5 mm

Modul for Line extension

- Module for DIN rail mounting
- The switching module is connected directly to a single amplifier output (1-Channel) or two outputs (2-Channel) and shares the power for announcements, background music and alerting to three monitored A / B lines
- The total output per module is max. 2x 500 W.

Line Extension, for 6 single or 3 A/B linies . . . . **NLE-406 A**
Dimensions (WxHxD): 118 x 90 x 65 mm

Extension housing for modules

Painted housing with cover made of sheet steel, quick release, incl. sockets. Sheet steel flange plates encircled with foamed-in PU seals.

- With DIN rail

Extension Housing, for DIN rail modules . . . . **NEH-100 A**
Dimensions (WxHxD): 500 x 300 x 120 mm

USB programming adapter

To configure and troubleshoot the VARES-1500 Network Control-Center (NVC-Series) via a PC or laptop.

The PC or laptop for error diagnosis is connected directly to the NVC and can be done on site with the associated software.

›VARES‹ Network Programing Adapter USB, with USB cable and CAT5e crossover patch cable (1m) . . . . **NPA-150 A**

VARES 1500 ›ALL-IN-ONE‹ VA-SYSTEM

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

RCS

System intercom station with 6 zone buttons and a PTT talk button. The individual zone keys can be programmed as desired and used for individual, group or all zones calls.

The microphone unit is connected directly to the control unit of NVC-Series. For higher security requirements, it can be redundantly integrated into the network.

The gooseneck microphone with hyper-cardio characteristic ensures the best voice quality.

›VARES‹ Desktop Microphone, with 6+1 Buttons . . . . **NTM-106 A**
Dimensions (DxWxH): 270x220x80 mm; weight: 350 g

Network Desktop Microphone
with 6 line buttons and talk button

This system intercom station has a 7˝ touch screen which allows a clear and uncomplicated programming of all functions.

In addition to the display of different status information, the touch screen offers the possibility of special functions on individual fields, such as playing stored audio files. The display also provides optimum reading and usability conditions by unfavorable lighting.

The hypercardioid microphone, in combination with the obtained compressor, ensures the best voice quality.

›VARES‹ Desktop Microphone, w. Touch-Screen . . . . **NTM-124 A**
Dimensions (DxWxH): 270x220x80 mm; weight: 350 g

Network Desktop Microphone
with Touch-Screen

with Touch-Screen

This desk or wall emergency call station with high priority and fault monitoring can be addressed to all zones or individual zone areas throughout the system, including all address calls, for highest priority voice alert. It is equipped with a hand-held microphone and a monitored PTT or TALK button.

The device is only intended for emergencies and can be used by the fire brigades, rescue teams and authorized security personnel. As an emergency microphone according to EN 54-16, it offers integrated monitoring of the microphone unit, the PTT button and the network connection.

›VARES‹ Fireman Wall Microphone . . . . **NFM-100 A**
for all call, Dimensions (WxHxD): 270x220x80 mm, 250 g

Fireman Wall Microphone
for all call

The fire brigade station according to DIN14664 (only available in Germany) is equipped with a noise-suppressing handheld microphone unit and has 5 buttons and 4 status LEDs. In case of an emergency the microphone allows a live fire announcement. Alternatively, the stored evacuation and warning announcements can also be activated.

The red housing (RAL-3000) corresponds to the specifications of fire alarm systems and has a lockable door in which a profile half cylinder according to DIN 18252 can be installed.

›VARES‹ Fireman Wall Microphone (FES) . . . . **NFM-200 A**
with control panel (compliant to DIN 14664), Dimensions (WxHxD): 253x185x59 mm, 3,2 kg

Fireman Wall Microphohe
with control panel (**DIN 14664**)

NEW

**Control panel suitable
for FIBS installation**

The multi-zone fire brigade wall microphone is equipped with a noise-suppressing handheld microphone unit, zone selection buttons for announcements and triggering of recorded voice messages. The microphone unit within the VARES-2000 architecture is used by the emergency services to assist evacuation of persons from a building during an emergency.

To provide operational security for the user, the network fire brigade wall microphone is equipped with LEDs on the front panel to display the following states: Status, All Call Only,Speak Now and Busy. The microphone unit is fully monitored.

›VARES‹ Fireman Wall Microphone . . . . **NFM-300 A**
with control panel, Dimensions (WxHxD): 440x385x140 mm, 6 kg

Fireman Wall Microphohe
with control panel

further system accessories

Network Patch Cable

The patch cables are designed for use in the VARES-1500 or VARES-2000 network.

Patchcable CAT6a, 0.5 m, yellow, (for VARES-1500/2000) **NPC-005**
Patchcable CAT6a, 1.0 m, yellow, (for VARES-1500/2000) **NPC-010**
Patchcable CAT6a, 3.0 m, yellow, (for VARES-1500/2000) **NPC-030**

Network Crossover Patch Cable

The crossover patch cables are designed for use in the VARES-1500 or VARES-2000 network.

Crossover-Cable CAT6, 0.5 m, gray, (for VARES-1500/2000) **NCC-005**
Crossover-Cable CAT6, 1.0 m, gray, (for VARES-1500/2000) **NCC-010**
Crossover-Cable CAT6, 2.0 m, gray, (for VARES-1500/2000) **NCC-020**
Crossover-Cable CAT6, 3.0 m, gray, (for VARES-1500/2000) **NCC-030**
Crossover-Cable CAT6, 5.0 m, gray, (for VARES-1500/2000) **NCC-050**

EN
54-16
certified

EN
54-4
certified
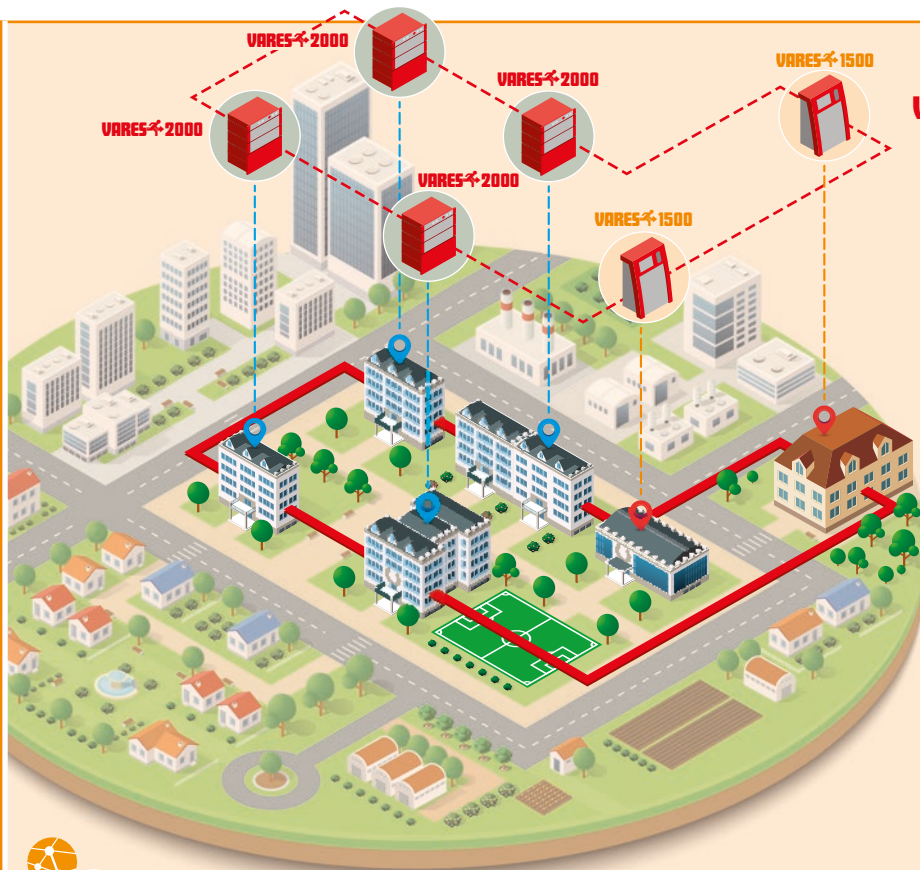
Compatible with:
VARES 1500
VARES LOOP

VOICE ALARMING SYSTEM
»EASY NETWORK«

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

for a maximum of system security

AT DIFFERENT LOCATIONS

VARES 2000

VARES 2000

VARES 2000

VARES 2000

VARES 1500

VARES 1500

**NETWORKABLE
VARES 2000 & VARES 1500**

EXTENDABLE ON UP TO 255 NETWORK
NODES PER PEER-TO-PEER SYSTEM
(OPTIONALLY WITH OPTICAL FIBER CABLE)

max. Distance between the nodes:
250 m (standard Cat5 cable)
500 m (Cat7 cable)
2.000 m (fiber optic, optional)

SAAnetwork

Special highlight:
The decentralized combination of the VARES-1500 & 2000
systems. This achieves the greatest possible security.

For planners and engineering companies

COST SAVINGS

The practical combination of voice alarm controller, external line modules and system
power amplifiers with integrated emergency power management, makes each design
of a system very simple.

FLEXIBILITY

Due to the digital networking of the VARES-2000 and VARES-1500, a simple extension
or combination of both systems is also possible on a decentralized basis.

The VARES-2000 system monitors the speaker lines via impedance monitoring (EOL)
or supports VARES-LOOP technology.

SAFETY

The VARES-2000 system, in combination with the VARES-1500, offers complete sa-
fety. Even in the case of faults within the redundant network, the distributed systems
in the building continue to operate autonomously thanks to the decentralized alarm
concept, the area-by-stage alarm remains ensured.

VARES 2000 EASY NETWORK

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

R·C·S

EN 54-16 certified

MADE IN EUROPE

NEW

+ **Easy networking –**
  without master/slave principle

+ **Up to 1.440 lines**
  or 255 call groups can be extended

+ **Monitoring of all functions**
  to maintain the VA system

+ **Max. 240.000 W power possible**

Description

The Control Center is the heart of the VARES-2000 system. It manages all the functions of a voice alarming system, incoming information and audio signals. It controls the network amplifiers, the A/B channels and the monitored line extensions according to the requirements. This also includes managing of audio streams coming from the network.

The VARES-2000 control center processes the inputs according to its own signal priority table and distributes the audio signal to a maximum of 16x NDA-1000 A per control center amplifier via the digital AMP link module, which manages two prioritized streams via a dynamic allocation technique.

The remote-controlled line extensions (NLE-406A) work directly with the NCC-2000 A. These devices route the audio from the A/B channels of the amplifier to the required speaker areas or zones.

Two simultaneous audio signals are managed via an extensible switch matrix. This can range from a minimum of 6 speaker lines to a maximum of 1.440 speaker lines that can be grouped into a maximum of 255 virtual call zones.

The controller has monitored GPI and unmonitored GPO interfaces, global and local network ports. The monitored AMP connection communicates via the VARES-2000 data bus with the NDA-1000 A amplifiers.

The VARES-2000 system uses the same configuration software as the VARES-1500 system which makes the combination of both systems simple and uncomplicated.

Please consider the following features:
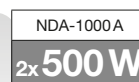
- AudioAudio matrix function with DSP.

- Up to 255 network nodes per system with peer-to-peer System redundant (ring technology).

- Mains voltage and battery monitoring.

- Supports loop technique and EOL (end-of-line).

- Amplifier and microphone monitoring.

- Text Module & Digital Speech Memory.

- Priority channel with second and/or backup channel.

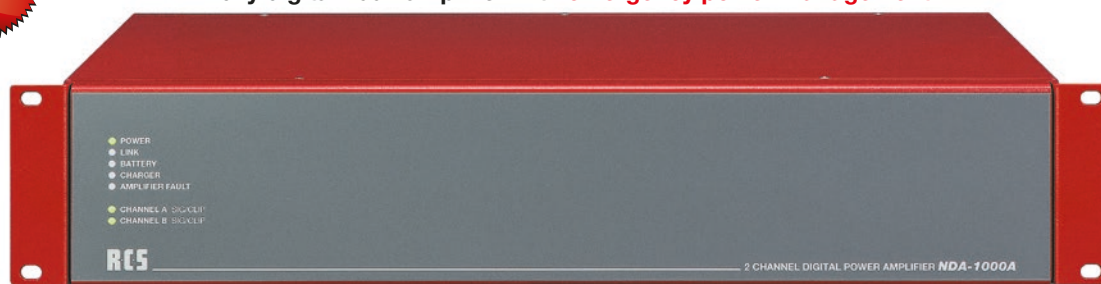- 16 monitored or unmonitored inputs, freely configurable via software.

★

Technical data	NCC-2000 A
Speaker lines expandable (with NLE-406 A)	6 to 1,440 individual circles (grouped into a maximum of 255 virtual call groups)
Connections	1x AMP-Link (NDA-1000A), 2x Global-Network, 3x Local-Network
Input contacts (monitored)	16x Inputs (with NIM-116A erweiterbar)
Audio inputs	2x BGM (analog) symmetrical 0dBu (with NIM-116A erweiterbar)
Output contacts	1x alarm contact, 1x error contact (Relais), 8x duty call output (open collector)
Speech memory	22 announcements of 5 minutes each (17 free)
Frequency (local network)	50 - 20.000 Hz (-3 dB)
Frequency (global network)	100 - 12.000 Hz (-3 dB)
Signal-to-noise ratio	better than 90 dB
THD at 1kHz	± 0,05%
Power supply	24V DC / 300 mA
Dimensions (WxHxD)	483 x 44,2 x 365 mm; 1 RU
Weight	approx. 2,5 kg

Model designation

»VARES-2000« Network Control-Center, (Audio-Matrix), 1 RU . . . . **NCC-2000 A**

»VARES-2000« Network Control-Center Expander, (Audio-Matrix Extension for NCC-2000 A), 1 RU. . . . . **NCE-2000 A**

MADE IN EUROPE

NEW

energy-saving

NDA-1000 A

2x **500 W**

EN 54-16 certified

EN 54-4 certified

Fully digital 100V amplifier with emergency power management

Description

The Network Digital Power Amplifier offers powerful audio amplification to EN 54-16 and an integrated emergency power supply to EN 54-4 standards.

Depending on configuration, the power amplifier supplies 2x 500 W output power in a 2 RU 19″ rack casing. It differs from conventional power amplifiers in its fully digital system architecture and its three redundant power supplies.

Multiple NDA-1000 A amplifiers can be connected together on one battery pack. The active charger charges the battery pack that forms the backup power supply. In addition, an external 24 V connection is available for supplying additional modules.

Please consider the following features:

- Digital power amplifier with integrated emergency power supply. The scalable battery charger has a temperature sensor and is certified to EN 54-4.
- Displays: Power; Link; Battery; Charger, error message CH A SIG / CLIP; CH B SIG / CLIP.
- The following connections are available: 2x Global Network Connection (Amp Link), 2x 500 W power outputs.
- Battery pack connection and 24 V DC output for external components.
- Network fault monitoring with switch to emergency power operation.

- The amplifier has two BGM inputs for stand-alone operation and one AUX input (mono, balanced) or 2-Channel mode Stereo (unbalanced), each (analogue) 0dBu
- Monitoring battery failures (with internal resistance measurement).
- Monitoring of power outputs.

★

Technical data	NDA-1000 A
Output power	2x 720/500 W (Program/RMS)
Output load	4Ω min.; 20Ω @Output power
Input sensitivity	max. 775 mV (RMS) / 0dBu symmetrisch
Output voltage	100V
Frequency response	3 ~ 35.000 Hz (better than -3 dB)
Signal-to-noise ratio	better than 90 dB
THD at 1kHz	better than 0,1%
Crosstalk (20 Hz – 20 kHz)	< -100 dB
Power consumption	max. 1350W
Inrush current	max. 6A @ 230V AC
DC Stromaufnahme	max. 45A @ 24V DC
Idle current	24 W (active) / 0.9 W (standby)
Idle current consumption (DC)	1 A (active) / 34 mA (standby)
Efficiency	89% @ 230V AC / 93% @ 24V DC
DC output (external devices)	max. 60W / 2A
Charging voltage	max. 27.9V DC
Charging current	max. 4A
Dimensions (WxHxD)	483 x 88,5 x 350 mm; 2 RU
Weight	approx. 16,5 kg

Model designations

»VARES-2000« Network Digital Power Amplifier, 2x 500 W, (full digital, with emergency power management) . . . .**NDA-1000 A**

optional accessories:

Lead Acid Battery-Set, (45 Ah); Weight: 28,6 kg. **BA-080**
Lead Acid Battery-Set, (65 Ah); Weight: 42,6 kg. **BA-140**
Lead Acid Battery-Set, (78 Ah); Weight: 55,0 kg. **BA-160**

VARES·2000 EASY NETWORK

RCS

System intercom station with 6 zone buttons and a PTT talk button. The individual zone keys can be programmed as desired and used for individual, group or all zones calls.

The microphone unit is connected directly to the control unit NCC-2000 A. For higher security requirements, it can be redundantly integrated into the network.

The gooseneck microphone with hyper-cardio characteristic ensures the best voice quality.

›VARES‹ Desktop Microphone, with 6+1 Buttons . . . . **NTM-106 A**
Dimensions (DxWxH): 270x220x80 mm; weight: 350 g

Network Desktop Microphone
with 6 line buttons and talk button

This system intercom station has a 7˝ touch screen which allows a clear and uncomplicated programming of all functions.

In addition to the display of different status information, the touch screen offers the possibility of special functions on individual fields, such as playing stored audio files. The display also provides optimum reading and usability conditions by unfavorable lighting.

The hypercardioid microphone, in combination with the obtained compressor, ensures the best voice quality.

›VARES‹ Desktop Microphone, w. Touch-Screen . . . . **NTM-124 A**
Dimensions (DxWxH): 270x220x80 mm; weight: 350 g

Network Desktop Microphone
with Touch-Screen

with Touch-Screen

This desk or wall emergency call station with high priority and fault monitoring can be addressed to all zones or individual zone areas throughout the system, including all address calls, for highest priority voice alert. It is equipped with a hand-held microphone and a monitored PTT or TALK button.

The device is only intended for emergencies and can be used by the fire brigades, rescue teams and authorized security personnel. As an emergency microphone according to EN 54-16, it offers integrated monitoring of the microphone unit, a PTT button and the network connection.

›VARES‹ Fireman Wall Microphone . . . . **NFM-100 A**
for all call, Dimensions (WxHxD): 270x220x80 mm, 250 g

Fireman Wall Microphone
for all call

The fire brigade station according to DIN14664 (only available in Germany) is equipped with a noise-suppressing handheld microphone unit and has 5 buttons and 4 status LEDs. In case of an emergency the microphone allows a live fire announcement. Alternatively, the stored evacuation and warning announcements can also be activated.

The red housing (RAL-3000) corresponds to the specifications of fire alarm systems and has a lockable door in which a profile half cylinder according to DIN 18252 can be installed.

›VARES‹ Fireman Wall Microphone (FES) . . . . **NFM-200 A**
with control panel (compliant to DIN 14664), Dimensions (WxHxD): 253x185x59 mm, 3,2 kg

NEW

Fireman Wall Microphohe
with control panel (DIN 14664)

Control panel suitable for FIBS installation

The multi-zone fire brigade wall microphone is equipped with a noise-suppressing handheld microphone unit, zone selection buttons for announcements and triggering of recorded voice messages. The microphone unit within the VARES-2000 architecture is used by the emergency services to assist evacuation of persons from a building during an emergency.
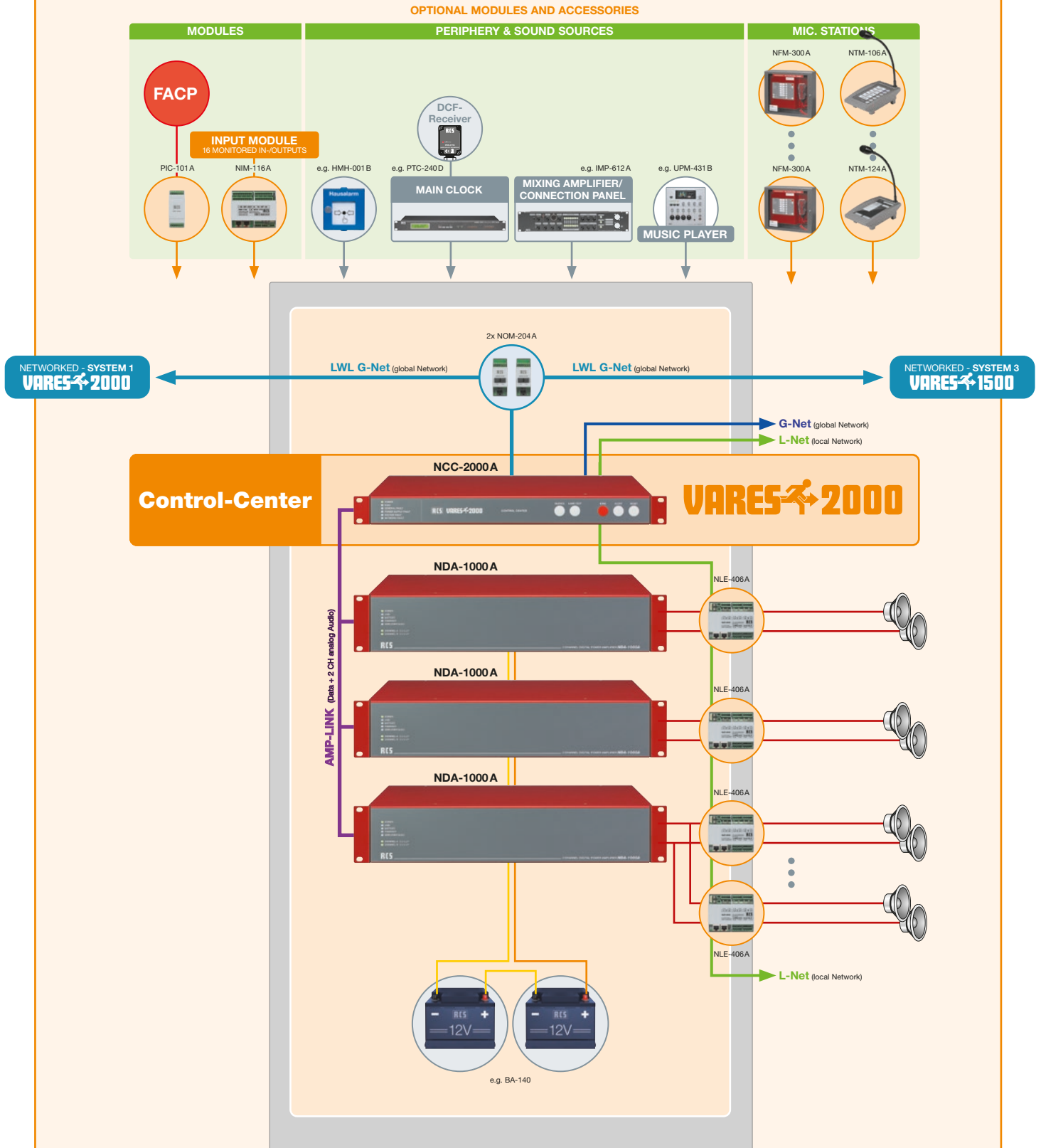
To provide operational security for the user, the network fire brigade wall microphone is equipped with LEDs on the front panel to display the following states: Status, All Call Only, Speak Now and Busy. The microphone unit is fully monitored.

›VARES‹ Fireman Wall Microphone . . . . **NFM-300 A**
with control panel, Dimensions (WxHxD): 440x385x140 mm, 6 kg

Fireman Wall Microphohe
with control panel

RCS

EASY NETWORK VARES 2000

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

SYSTEM OVERVIEW

OPTIONAL MODULES AND ACCESSORIES

MODULES	PERIPHERY & SOUND SOURCES	MIC. STATIONS

FACP

NFM-300 A   NTM-106 A

INPUT MODULE
16 MONITORED IN-/OUTPUTS

DCF-Receiver

PIC-101 A   NIM-116 A

e.g. HMH-001 B   e.g. PTC-240 D   e.g. IMP-612 A   e.g. UPM-431 B

NFM-300 A   NTM-124 A

MAIN CLOCK

MIXING AMPLIFIER/ CONNECTION PANEL

MUSIC PLAYER

2x NOM-204 A

NETWORKED - **SYSTEM 1**
VARES 2000

LWL G-Net (global Network)   **LWL G-Net** (global Network)

NETWORKED - **SYSTEM 3**
VARES 1500

→ **G-Net** (global Network)
→ **L-Net** (local Network)

NCC-2000 A

Control-Center

VARES 2000

NDA-1000 A

NLE-406 A

NDA-1000 A

NLE-406 A

AMP-LINK (Data + 2 CH analog Audio)

NDA-1000 A

NLE-406 A

NLE-406 A

→ **L-Net** (local Network)

12V   12V

e.g. BA-140

VARES 2000 EASY NETWORK

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

R·C·S

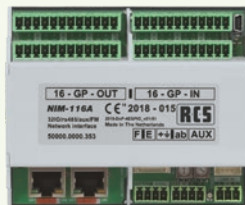## Input-/Output modules

Fiber optic converter module

- Module for DIN rail mounting
- Connection for multimode fiber optic cable (820 nm / SC plug / double fiber)
- Max. Distance between the modules 2.000 m

FO Converter, for network . . . . **NOM-204 A**
Dimensions (WxHxD): 36 x 90 x 62 mm

Network interface (monitored)

- Module for DIN rail mounting
- 16 monitored inputs (normally open or normally closed)
- 16 outputs (per output individually as normally open or normally closed), switching capacity 40 V / 150 mA per channel
- 1 AUX input
- 1 error contact (NC)
- 1 alarm contact (NO)

Input-/Outputmodule . . . . **NIM-116 A**
for monitored inputs and outputs; Dimensions (WxHxD): 118 x 90 x 65 mm

FACP/VAS Interface

- Module for DIN rail mounting
- FACP (BMZ)/VAS according to VDE 0833-4 Appendix G
- Control voltage of fire alarm system
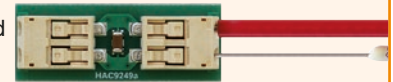- Resistor-monitored normally open contact for faults in VAS

FACP/VAS Interface, according to VDE 0833-4 . . . . **PIC-101 A**
Dimensions (WxHxD): 36 x 90 x 62 mm

Line modules

End-of-Line module

- The end-of-line module (EOL) monitors the conduction path for short circuits, disruption and ground faults. The module will be at the end of the line at the last speaker connected.
- Adjustable total power of the monitored loudspeaker line from 10 to 200 W.
- Test noise monitored with 20 KHz.

End-of-Line Modul . . . . **NLM-200 A**
Dimensions (WxHxD): 40 x 20 x 5 mm

Modul for Line extension

- Module for DIN rail mounting
- The switching module is connected directly to a single amplifier output (1-Channel) or two outputs (2-Channel) and shares the power for announcements, background music and alerting to three monitored A / B lines
- The total output per module is max. 2x 500 W.

Line Extension, for 6 single or 3 A/B linies . . . . **NLE-406 A**
Dimensions (WxHxD): 118 x 90 x 65 mm

GPO Relay-Output module

- Module for DIN rail mounting
- 8-fold GPO outputs
- The variables potential-free contacts or duty call (duty call voltage of 24-29V) are possible for each GPO output.
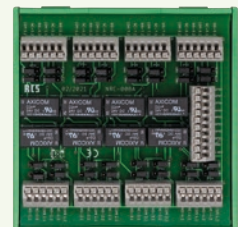
GPO Relay-Output module, 8-fold for GPO . . . . . . **NRC-008 A**
Dimensions (WxHxD): 112 x 112 x 38 mm

USB programming adapter

To configure and troubleshoot the VARES-2000 Network Control-Center (NCC-2000 A) via a PC or laptop.

The PC or laptop for error diagnosis is connected directly to the NVC and can be done on site with the associated software.

›VARES‹ Network Programing Adapter USB, with USB cable and CAT5e crossover patch cable (1m) . . . . **NPA-150 A**
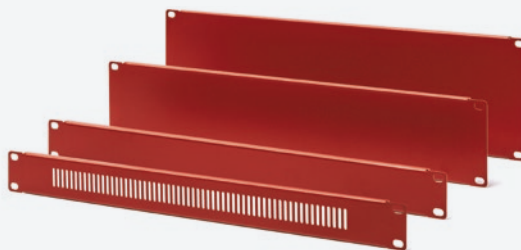
further system accessories

19˝ Blank Panels

These 19˝ blank panels made of 1.3 mm steel serve to fill empty spaces or ventilation (NLF-001) in 19˝ rack cabinets.

19˝-Vent Panel, 1 RU (weight: 0,28 kg). **NLF-001**
19˝-Blank Panel, 1 RU (weight: 0,34 kg) **NLP-001**
19˝-Blank Panel, 2 RU (weight: 0,59 kg) **NLP-002**
19˝-Blank Panel, 3 RU (weight: 0,85 kg) **NLP-003**

Network Patch Cable

The patch cables are designed for use in the VARES-1500 or VARES-2000 network.

Patchcable CAT6a, 0.5 m, yellow, (for VARES-1500/2000) **NPC-005**
Patchcable CAT6a, 1.0 m, yellow, (for VARES-1500/2000) **NPC-010**
Patchcable CAT6a, 3.0 m, yellow, (for VARES-1500/2000) **NPC-030**

Network Crossover Patch Cable

The crossover patch cables are designed for use in the VARES-1500 or VARES-2000 network.

Crossover-Cable CAT6, 0.5 m, gray, (for VARES-1500/2000) **NCC-005**
Crossover-Cable CAT6, 1.0 m, gray, (for VARES-1500/2000) **NCC-010**
Crossover-Cable CAT6, 2.0 m, gray, (for VARES-1500/2000) **NCC-020**
Crossover-Cable CAT6, 3.0 m, gray, (for VARES-1500/2000) **NCC-030**
Crossover-Cable CAT6, 5.0 m, gray, (for VARES-1500/2000) **NCC-050**

EN
54-16
certified
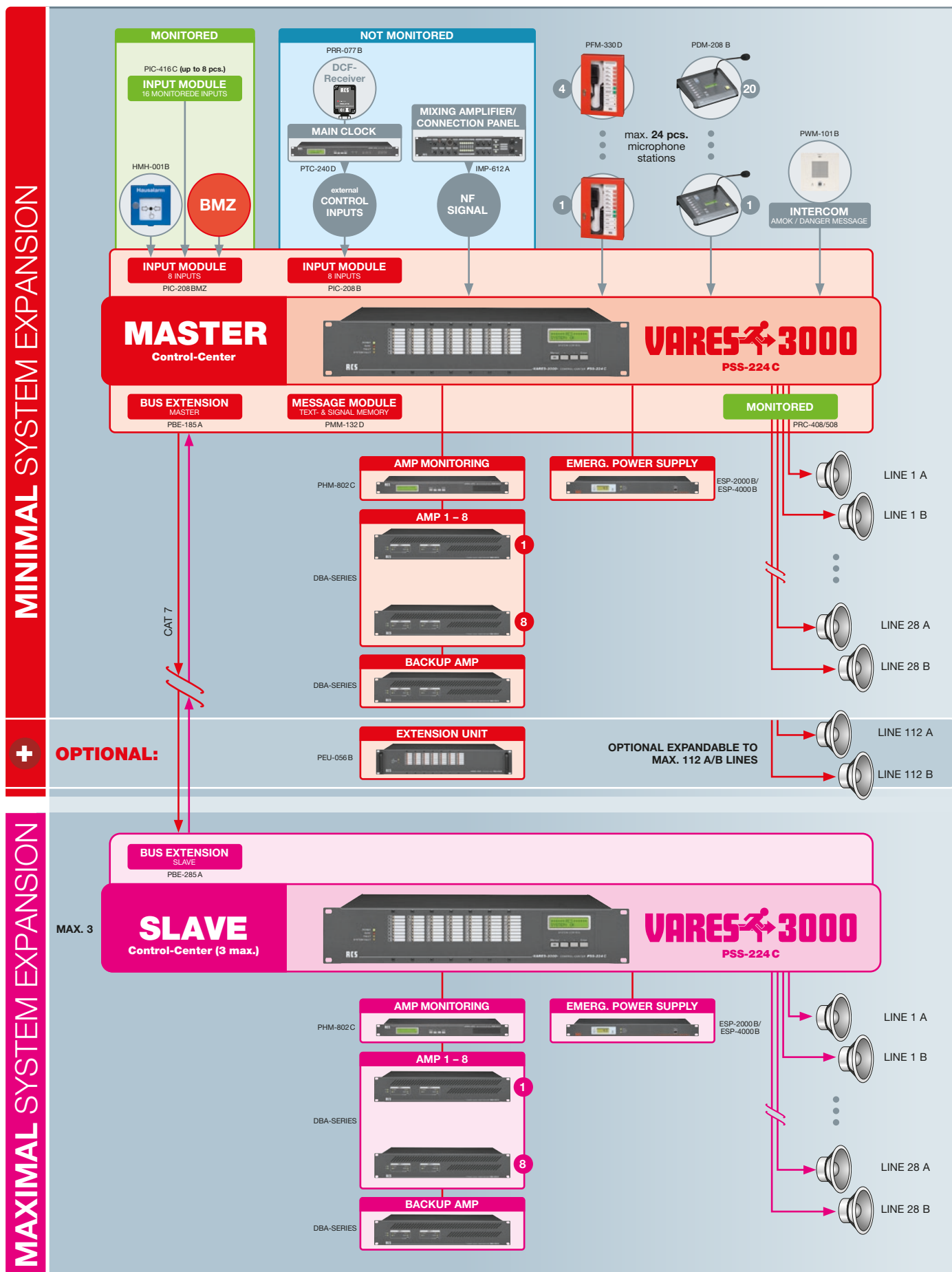
›VARES-3000‹ CONTROL-CENTER *PSS-224 C*

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

VOICE ALARM & CALL SYSTEM VARES 3000

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

MINIMAL SYSTEM EXPANSION

MONITORED

PIC-416 C (up to 8 pcs.)

INPUT MODULE
16 MONITOREDE INPUTS

HMH-001B

BMZ

NOT MONITORED

PRR-077 B

DCF-Receiver

MAIN CLOCK

PTC-240 D

external **CONTROL INPUTS**

MIXING AMPLIFIER/ CONNECTION PANEL

IMP-612 A

NF SIGNAL

PFM-330 D — 4 / 1

PDM-208 B — 20 / 1

max. **24 pcs.** microphone stations

PWM-101B

INTERCOM
AMOK / DANGER MESSAGE

INPUT MODULE
8 INPUTS
PIC-208 BMZ

INPUT MODULE
8 INPUTS
PIC-208 B

MASTER
Control-Center

VARES 3000
PSS-224 C

BUS EXTENSION
MASTER
PBE-185 A

MESSAGE MODULE
TEXT- & SIGNAL MEMORY
PMM-132 D

MONITORED
PRC-408/508

AMP MONITORING
PHM-802 C

EMERG. POWER SUPPLY
ESP-2000 B/ ESP-4000 B

LINE 1 A

LINE 1 B

AMP 1 – 8
DBA-SERIES
1
8

LINE 28 A

LINE 28 B

CAT 7

BACKUP AMP
DBA-SERIES

+ OPTIONAL:

EXTENSION UNIT
PEU-056 B

OPTIONAL EXPANDABLE TO MAX. 112 A/B LINES

LINE 112 A

LINE 112 B

MAXIMAL SYSTEM EXPANSION

BUS EXTENSION
SLAVE
PBE-285 A

MAX. 3

SLAVE
Control-Center (3 max.)

VARES 3000
PSS-224 C

AMP MONITORING
PHM-802 C

EMERG. POWER SUPPLY
ESP-2000 B/ ESP-4000 B

LINE 1 A

LINE 1 B

AMP 1 – 8
DBA-SERIES
1
8

LINE 28 A

LINE 28 B

BACKUP AMP
DBA-SERIES

VARES✦3000 VOICE ALARM & CALL SYSTEM

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

R·C·S

EN 54-4 certified

EN 54-16 certified

EN 54-24 certified

MADE IN GERMANY

Main features of the VARES-3000 system:

+ **Directly from the certified manufacturer – Made in Germany**

+ **VARES BUS SYSTEM for system components**

+ **Intelligent modular design**

+ **Energy efficient, fully digital system technology**

Description

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

The system is used in office and industrial buildings, educational institutions such as schools and universities, hotels, shopping centers, multifunctional halls, sports arenas, train stations, hospitals, swimming pools and other large leisure facilities.

FURTHER VARES-3000 SYSTEM FEATURES:

● Control and monitoring of up to 224 loudspeaker lines can be implemented

● Up to 24 call stations can be implemented (per control center)

● Expandable modular design

● Extension of the lines in steps of 8

● BUS system for all system components

● Free programming of the assignment of loudspeaker lines and groups

● Programming and configuration via PC software

● Archiving of the setting data

● Network interface for programming and configuration

● Monitoring of all system components according to EN 50849 / VDE 0828.

● System certified according to EN 54-16

● Latest digital technology

● and much more…

VARES✦3000

Advice, planning and offers for a VARES-3000 system that is individually tailored to your project can be obtained by calling:

+49 80 61-35 01-0

RCS

MADE IN GERMANY
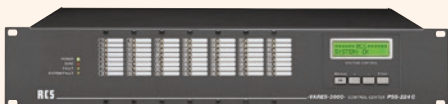
CONTROL-CENTER

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.

›VARES-3000‹ **Control-Center,** 2 RU . . . . **PSS-224 C**

The 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. A maximum of 3 extension units can be used per PSS-224 C.

›VARES-3000‹ **Extension Unit,** 2 RU, for PSS-224 C. . . . . **PEU-056 B**

›VARES-3000‹ **Extension Cable** **PFK-200**
Connecting cable for PEU-056 and Program Selector PPS-024 A

Output- and control modules

Relay Card for 8 speaker lines. The card relays are equipped with power contacts. For switching medium inductive loads up to 600VA.

›VARES-3000‹ **Relay Card 8 Lines,** digital . . . . **PRC-008 C**
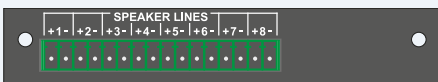
Relay card for earth fault impedance monitoring with 80Hz AC voltage in connection with the measuring module PMO-350 C.

›VARES-3000‹ **Relay Card Ground Leakage,** digital . . . . **PRC-248 B**

Relay card for special functions. Programmable for alarming, error indication and emergency call Switching option as an emergency power relay during power failure.

›VARES-3000‹ **Relay Card Special Functions,** 8-fold, digital . . . . **PRC-308 C**
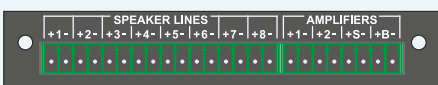
Monitored relay card for 2 paging amplifiers, one program amplifier and 8 speaker outputs. Freely programmable using VARES-3000 software.
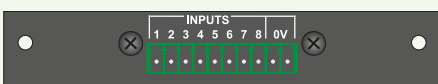
›VARES-3000‹ **Matrix-Relay Card 2x8,** digital . . . . **PRC-408 C**
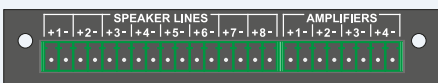
Monitored relay card for 1–4 power amplifier inputs and 8 loudspeaker outputs. Freely programmable using VARES-3000 software..

VARES-3000‹ **Matrix-Relay Card 4x8,** digital . . . . **PRC-508 A**
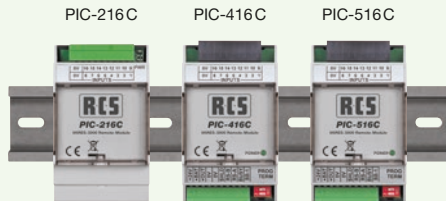
Input modules

8 freely programmable input contacts. Assignment of any line selection or different chime types or text files with an text module installed.

›VARES-3000‹ **Input Module,** 8 input contacts, digital . . . . **PIC-208 B**

Input modules

MADE IN GERMANY

PIC-216 C   PIC-416 C   PIC-516 C

Expands the Control Center PSS-224 C by further 16 alarm inputs. Independent bus device can be mounted on a DIN rail. With bus connection.

›VARES-3000‹ **Input Module, Master** 16 monitored inputs, digital . . . . **PIC-416 C**

Extension module for 16 monitored alarm inputs. Up to 3 modules can be connected to a PIC-416 C (max. 64 inputs). With bus connection.

›VARES-3000‹ **Input Module, Slave** 16 monitored inputs, digital. . . . . **PIC-216 C**

Digital input module for DIN rail mounting. 16 programmable inputs (monitoring can be switched on and off). Independent bus device.

›VARES-3000‹ **Matrix-Relay Card 2x8,** digital . . . . **PIC-516 C**

Function modules

PFH-458 A   PNC-224 C   PNF-101 C
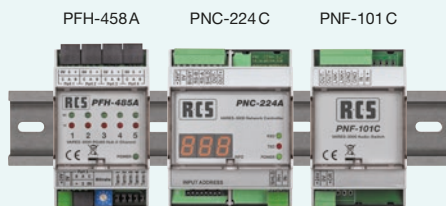
5-channel, potential free RS485 hub for DIN rail mounting. Star-shaped wiring of RS485 buses possible.

›VARES-3000‹ **RS485-Hub, 5 Channel,** digital . . . . **PFH-485 A**

Module for networking VARES-3000 systems. Each PNC-224 A enables 8 line groups to be controlled in the SLAVE system.

›VARES-3000‹ **Network Control,** zur Vernetzung von VARES-Anlagen, digital . **PNC-224 A**

Input for alarm or paging signal. Connection for Priority call-voltage (+ OR connection to PSS-224 C). Input for background music

›VARES-3000‹ **NF-Switch, 1-Channel,** digital . . . . **PNF-101 C**

Single or simultaneous switching of 4 inputs to 4 outputs. Balanced audio connections. E.g. to route the signals for a 3 fold sports hall..

›VARES-3000‹ **Audio-Matrix Module, 4x4,** digital . . . . **PAX-404 A**

Enables the connection of external modules (relay cards, measuring module) to the Control Center. Modules can be installed remotely up to 1.2 km away.

›VARES-3000‹ **Remotemodul,** digital . . . . **PBC-610 A**
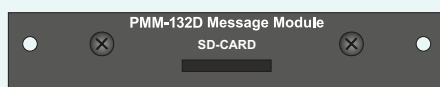
Recording of 32 individual texts in mp3 format on memory card. Alarm text, alarm siren according to DIN 33404 - Part 3, 7 types of chimes prepared.

›VARES-3000‹ **Message-Module,** digital . . . . **PMM-132 D**

The PBE-185 A is an extension module of the PSS-224 C for extension and potential separation of the internal I²C-bus to the outside.

›VARES-3000‹ **Bus-Extension – Master,** digital. . . . . **PBE-185 A**

Extension module of the PEU-056 B to extend the I²C bus from the Control Center PSS-224 C.

›VARES-3000‹ **Bus-Extension – Slave,** digital . . . . **PBE-285 A**

DIN rail module to extend the I²C bus from the Control Center PSS-224 C. With remote modules.

›VARES-3000‹ **Bus-Extension – Slave,** digital . . . . **PBE-385 A**

MADE IN GERMANY

Function modules

Display module for displaying current operating conditions, system and error messages. Operation is via 4 buttons on the front of the device.

›VARES-3000‹ **Display- and Button Module,** digital . . . . **PLC-400 A**

Display of the status of the line relays on a remote relay card or the relay cards in a remote control center. Two-color status indicator (red / green).

›VARES-3000‹ **Display Module,** 8-LEDs, digital . . . . **PLE-628 A**

Module for measuring and monitoring functions. Necessary for line, microphone and amplifier monitoring.

›VARES-3000‹ **Monitoring and Measuring Module,** digital . . . . . . **PMO-350 C**

Monitoring module for installation in the PDM-208 B microphone station. Monitoring of the microphone in accordance with VDE 0828 / EN 50849.

›VARES-3000‹ **Microphone Monitoring Module,** digital . . . . **PMO-400 B**

End-of-line module to terminate the loudspeaker lines in order to monitor them in accordance with standards if more than 20 loudspeakers are connected per line.

›VARES-3000‹ **End-of-Line Module** . . . . **PLT-100 A**

MAIN CLOCK

This master clock enables the control of up to 130 slave clocks on 2 independent slave clock lines in pulse mode, as well as the time-dependent control of up to 240 switching contacts (in connection with the Control Center PSS-224 C). Two relay cards (PTC-008 B) can be installed. These two provide 16 switching contacts directly.

›VARES-3000‹ **Main Clock,** incl. slave clock control, digital . . . . **PTC-240 D**

The DCF bus module is processor-controlled and works independently. It synchronizes all devices on the bus that require an exact system time.

›VARES-3000‹ **DCF-Bus Module,** Radio receiver, for PTC-240 D . . . . **PRR-077 B**

Relay card with 8 relay switchover contacts extends the functionality of the master clock. Up to two of these 8-fold relay cards can be installed.

›VARES-3000‹ **Relay Card,** 8-fold, for PTC-240 D, digital . . . . **PTC-008 B**

Relay module for use in the slave clock line. To increase the number of slave clocks or as a booster for long supply lines to the slave clock.

›VARES-3000‹ **Relay-Module, Booster,** for PTC-240 D slave clocks . . . . . **PTC-102 A**

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

›VARES-3000‹ **Programming Adapter,** for PTC-240 D **PCA-300**

›VARES-3000‹ **Power Supply, 24V,** 2A, for PTC-240 D **PSU-048/24**

VARES 3000 SYSTEM COMPONENTS

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

R·C·S

AMPLIFIER MONITORING

The digital emergency management enables the permanent monitoring of up to 10 amplifiers, of which a maximum of 8 can be configured as call amplifiers and 2 as backup amplifiers. The connected amplifiers are checked sequentially using the pilot tone.

›VARES-3000‹ **Amplifier Monitoring,** 1 RU, digital . . . . **PHM-802 C**

The amplifier monitoring is integrated into the VARES-3000 system through this interface and monitoring is ensured via the bus cable.

›VARES-3000‹ **Bus option RS-485,** digital . . . . **PHM-485 B**

After installing the monitor module, all 10 amplifier outputs (8 + 2) can be monitored. Monitoring speaker: broadband, 4W 8 ohms.

›VARES-3000‹ **Monitor Module,** for 10 amplifiers (installation in PHM-802 C) . **PMU-802 A**

PROGRAM SELECTOR

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

›VARES-3000‹ **Program Selector,** 1 RU, 24 buttons . . . . **PPS-024 A**

›VARES-3000‹ **Extension Cable** **PFK-200**
Connection cable for PEU-056 B and PPS-024 A, for SLAVE connection of the PSS-224 C.

The bus module is required to locally separate the PPS-024 A Program Selector from the VARES-3000 Control Center (PSS-224 C).

›VARES-3000‹ **Bus module,** (für PPS-024A), digital . . . . **PBC-400 B**

Keypad for switching programmed background zones. It can also be used as a display panel for alarm inputs of the VARES-3000 system.

›VARES-3000‹ **Keypad Field,** 24 buttons . . . . **PKF-024 A**

Flush housing, for flush mounting of the PKF-024 A **UPG-400**

AMOK- / CONVERSATION UNIT

The processor-controlled talk-back unit not only offers the classic intercom function, but also serves as an indispensable tool for quick and precise alarming in an emergency (amok situation).

›VARES-3000‹ **Conversation-Unit** . . . . **PWM-101 B**

Flush housing, for flush mounting of the PWM-101 B **UPG-400**

Surface housing, for surface mounting the PWM-101 B **APG-400**

MADE IN GERMANY

DESKTOP MICROPHONES

This addressable all call remote microphone is suited for building the inter-communication system with up to 200 participants.
›VARES-3000‹ **All Call Desktop Microphone,** digital . . . . **PTM-101 B**

The digital microphone station can control 8 loudspeaker groups or individual lines. Expandable with various Microphone extension units.
›VARES-3000‹ **Microphone Station,** with LCD-Display, 8 switches, digital . **PDM-208 B**

›VARES-3000‹ **Connecting Cable,** for Microphone Extension Units **PFK-101**

The freely programmable buttons can be programmed for individual zones or for groups of several loudspeaker lines.
›VARES-3000‹ **Microphone Extension Unit,** 8 buttons, digital . . . . **PEM-008 B**

The programmable expansion module has four covered alarm buttons for the direct transmission of four different alarm signals.
›VARES-3000‹ **Microphone Extension Unit,** 4 alarm buttons, digital . . **PEM-104 B**

This microphone fault indicator modul displays selectively numerously appearing errors according to EN 50849 directly on one selected microphone..
›VARES-3000‹ **Microphone Fault Indicator Module,** digital . . . . . **PSM-108 B**

The module shows the internal address (e.g. room number), which is sent by the caller of another microphone station (PTM- or PWM-101 B).
›VARES-3000‹ **LED-Adress Module,** digital . . . . **PAM-130 A**

Numeric keypad as an extension unit for the PDM-208 B microphone station, for selecting individual or rarely used zones.
›VARES-3000‹ **Ten-Keys Pad,** digital . . . . **PZM-310 B**

Up to 8 loudspeaker groups can be switched on or prepared texts (from the PMM-132 D) can be called up using the memory buttons..
›VARES-3000‹ **Fire Brigade Microphone Station,** digital . . . . **PFM-308 C**

The illuminated buttons can be used to call up 5 alarm announcements from the PMM-132 D text module of the PSS-224 C in five freely configurable zones, which can be used to initiate the targeted evacuation of a building in the event of an alarm.
›VARES-3000‹ **Fire Brigade Wall Microphone Station,** digital . . **PFM-330 D**
compliant to VDE 0828/EN 50849,

Flexible expansion and combination options

VARES 3000 **SYSTEM COMPONENTS**

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

R·C·S
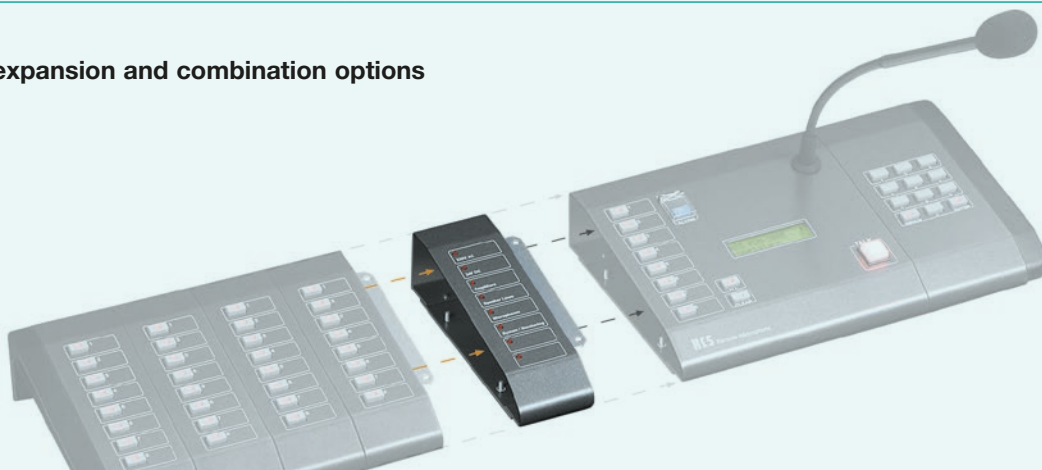
SYSTEM ACCESSORIES

Power supply units for the voltage supply of the corresponding VARES-3000 system component.

›VARES-3000‹ **Power Supply,   24 VA,** 24 V, 1A **PSU-024/24**

›VARES-3000‹ **Power Supply,   48 VA,** 24 V, 2A **PSU-048/24**

›VARES-3000‹ **Power Supply, 120 VA,** 24 V, 5A **PSU-120/24**

›VARES-3000‹ **Power Supply, 240 VA,** 24 V, 10A **PSU-240/24**

›VARES-3000‹ **Connecting Cable, 3 m,** for Microphone Stations **PMC-003**

Installation-friendly Sub-D 9 connection socket to connect the microphone units to the bus..
›VARES-3000‹ **Bus Connection Socket,** 25-pin . . . . **PBA-300 B**

Installation-friendly Sub-D 9 connection (surface mounting) to connect the microphone units to the bus.
›VARES-3000‹ **Bus Socket,** 25-pin for surface mounting . . . . **PAS-300 B**

Installation-friendly Sub-D 9 connection (flush mounting) to connect the microphone units to the bus.
›VARES-3000‹ **Bus Socket,** 25-pin for flush mounting . . . . **PWS-300 B**
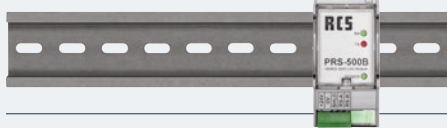
For configuration and fault diagnosis of the VARES-3000 Control Center via a PC or laptop.
›VARES-3000‹ **UDP-Telecomunication Module** . . . . **PRS-500 B**

The NTP software option enables synchronization with the local computer network through the PRS-500 B module. For the PSS-224 C and PTC-240 D devices, summer/winter time changeover is possible without an additional radio receiver.

›VARES-3000‹ **NTP-Software option for LAN-Adapter,** (NTP time synchronization via network) . . . . **PRS-500 NTP**

›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. Please contact us.

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

EN
54-17
certified
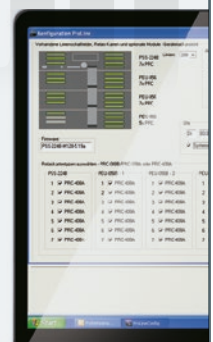
Compatible with:

VARES 1500
VARES 2000
VARES 3000

VARES LOOP

MONITORING OF
RING BUS LINES AND SPEAKER LINES

DETECT, LOCALISE AND ISOLATE IN 3 SECONDS

THE VARES-LOOP SYSTEM

With the VARES-LOOP system it is possible to quickly detect, localize and isolate faults in ring bus or loudspeaker lines. With this system, functional failures in audio transmission due to cable damage in the ring bus can be prevented cost-effectively and effectively.
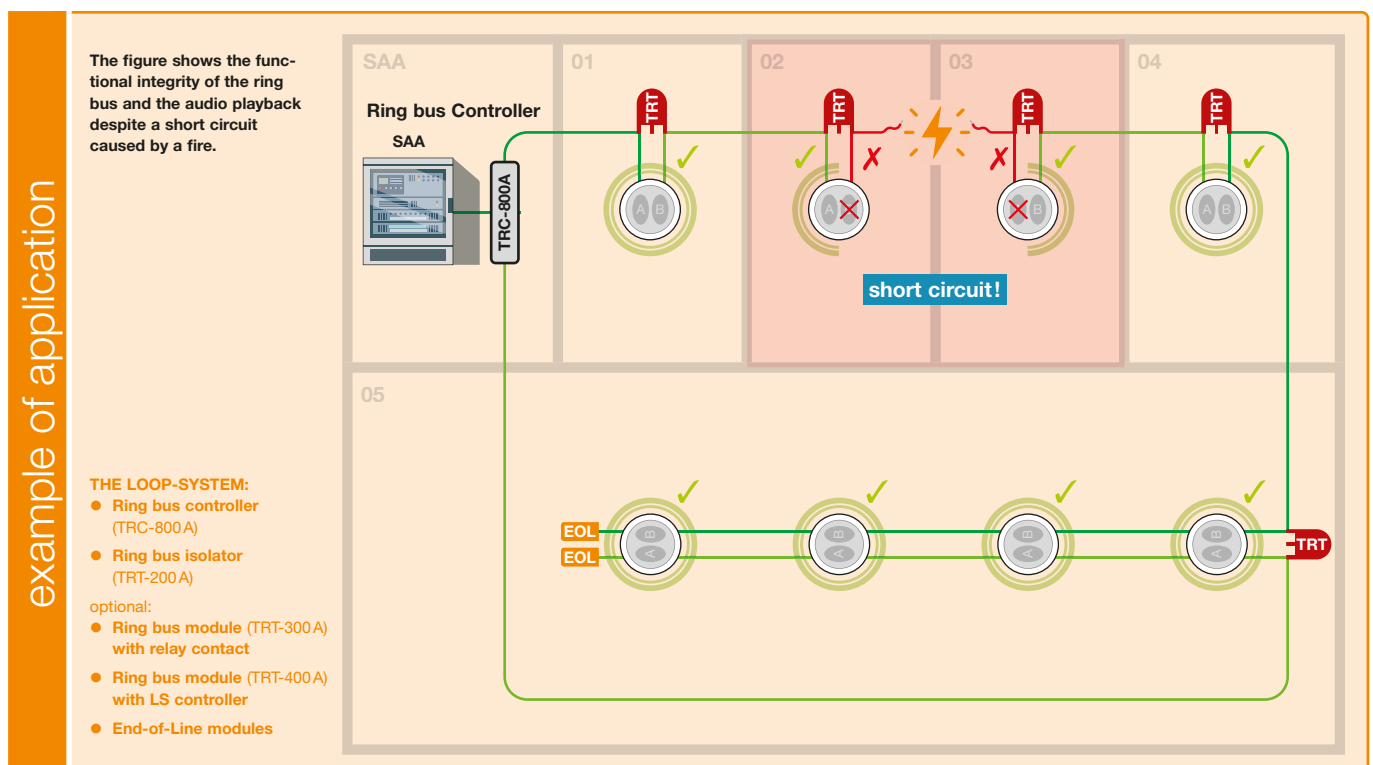
It is an EN 54-17 certified system for monitoring ring bus and loudspeaker lines in public address and voice alarm systems. With the VARES-LOOP system, loudspeaker circuits can be set up so that they meet the requirements of VDE 0833-4.

for planners and engineering offices

ADVANTAGES OF THE SYSTEM

+ **Flexible planning options while maintaining functionality in difficult building situations** (old building, modular building)

+ **Significant cost reduction by reducing E30 functional maintenance cables**

+ **Individual monitoring of loudspeakers possible if required**

+ **Fail-safe shutdown of third-party systems via existing ring line**

+ **Compatible with our voice alarm systems VARES-1500, VARES-2000 and VARES-3000**

example of application

The figure shows the functional integrity of the ring bus and the audio playback despite a short circuit caused by a fire.

SAA

Ring bus Controller
SAA

TRC-800A

short circuit!

THE LOOP-SYSTEM:
- **Ring bus controller** (TRC-800 A)
- **Ring bus isolator** (TRT-200 A)

optional:
- **Ring bus module** (TRT-300 A) **with relay contact**
- **Ring bus module** (TRT-400 A) **with LS controller**
- **End-of-Line modules**

EOL
EOL

TRT

VARES✦LOOP RING BUS SYSTEM

EN 54-17 CERTIFIED

R·C·S

EN 54-17 certified

Certification No.
0560-CPR-142190002

MADE IN EUROPE

NEW

TRC-800 A

- Loop line input
- Loop line output
- Reset button
- Earth fault display
- Display interruption
- Display short circuit
- Setting address H
- Setting address L
- Power amplifier connection

Control panel of the
TRC-800 A

Description

The ring bus controller TRC-800 A is the central unit in the VARES-LOOP system. The controller is located between the power amplifiers and the speaker line.

It supplies the ring bus modules (e.g. TRT-200 A) with voltage, performs the monitoring and data exchange between the ring bus modules and the electroacoustic warning system (EWS or VAS).

Technical data	TRC-800 A
Power supply	18 - 36 V DC, nominal voltage 24 V DC
Power consumption (@ 200 TRT-XXX full load)	Idle current 100 mA continuously max. Power consumption 2.4 W.
AC voltage	max. cont. 100 Vrms
AC current	max. cont. 5A
AC frequency range	40Hz - 20kHz (-3dB)
DC voltage	30 V
DC current	max. cont. 130mA
LOOP total load	max. 500 W
LOOP wiring	2-pole, max. 2,5 mm^2 / max. Loop length: 1.000 m
Loop relay contact	max. 250 V AC / 8A (dual-state type)
Bus address range	00 - FF (0-255) / max. 32 on a single rail
Detection - LOOP	short circuit, open circuit, earth fault
Max. number of ring bus modules	200 pieces
Connections	1x 5-pin DIN rail bus connector; 2x 3-pin screw connection; 1x 2-pin screw connection
Housing / Pretection class	ABS, DIN DIN rail mounting; IP 30
Dimensions (WxHxD)	17,5 x 114,5 x 99 mm, 1 HP
Weight	210 g
Certification	EN 54-17:2005, NEN2575-2

The ring bus modules can be switched to different modes using the ring bus controller operating software:

Service mode: The service mode is used to set up and commission the VARES-LOOP system.

Tracking Mode: While tracking the software determines which ring bus isolator has detected an error.

Please consider the following features:

- The TRC-800 A controller monitors whether a power amplifier is connected.

- Monitoring of the connected lines for earth fault, short circuit and open circuit.

- A loudspeaker group may cover a maximum area of 1,600m^2 and may not exceed a fire zone.

- Space-saving installation on DIN rails, only 1 module width.

- If an error occurs, the fault signaling contact is activated and the following operating states are displayed:
  – Ring bus short circuit
  – Ring bus earth fault
  – Ring bus interruption
  – Amplifier input open
  – amplifier input earth fault

Model designation

Ringbus Controller, for 1 HP DIN rail mounting . . . . **TRC-800 A**
(IP-30)

29

RING BUS SYSTEM VARES▶LOOP

EN 54-17 CERTIFIED

MADE IN EUROPE

NEW

EN 54-17 certified

Certification No.
0560-CPR-142190002

Ring bus IN Display

Ring bus OUT Display

Ring line (input)

Ring line (output)

Reset button

EOL switch

LED connection (fault)

Speaker connection
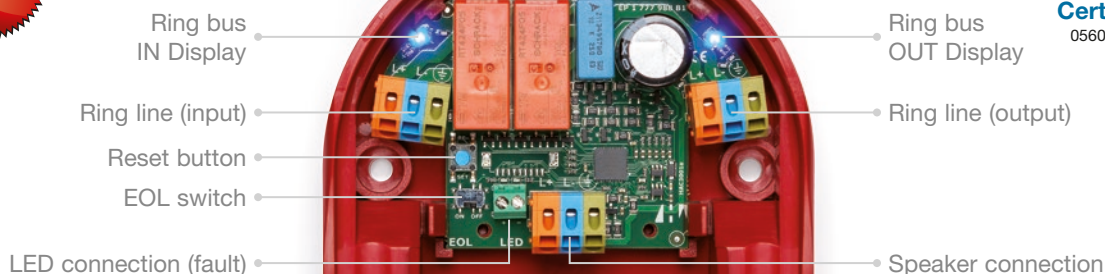
TRT-200 A

Mounting directly on the speaker is possible

Description

The ring bus isolator TRT-200 A is an EN 54-17 certified module for monitoring loudspeaker lines in electroacoustic emergency warning and voice alarm systems.

The ring bus isolators are linked in the loudspeaker ring line and transmit audio signals from the voice alarm system to the loudspeakers via the ring bus controller.

The ring bus isolator monitors the connection cables of the ring bus input, the ring bus output and the loudspeaker connection for short-circuit, open circuit and earth fault.

If an error occurs, this information is immediately sent to the TRC-800 A ring bus controller. At the same time, the ring bus isolator initiates the required measure, such as switching off the ring bus on the side where there is a short circuit. The ring bus display LED shows which side of the ring bus isolator is the source of the error.

All loudspeakers must always be connected via a DC blocking capacitor (TRK-001 A). I

Please consider the following features:

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- Detection and isolation of short-circuits in the adjacent loudspeaker lines.

- Detection and isolation of interruptions, short circuits and overloads at branch points.

★

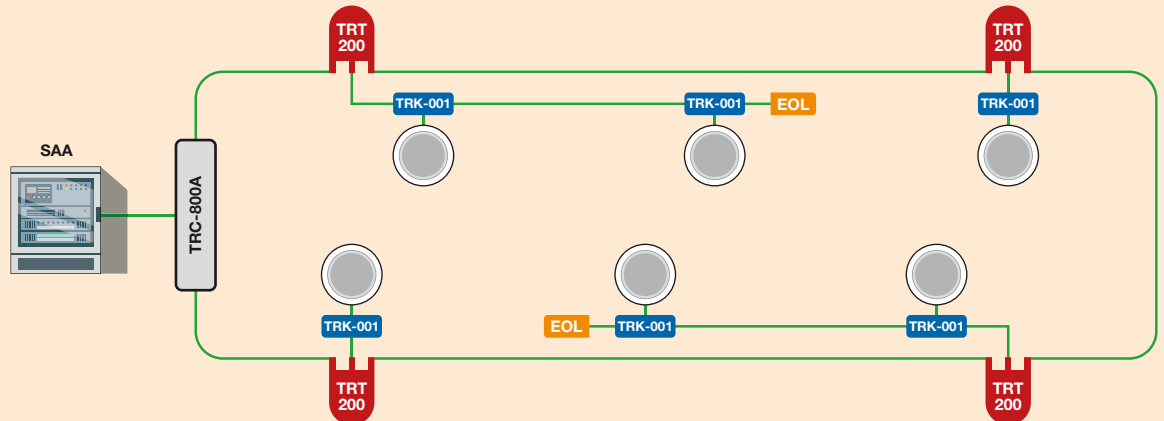| Technical data	TRT-200 A
Power supply (via TRC-800A)	19 - 30 V DC, nominal voltage 30 V DC
Power consumption	Idle current 100 μA continuous max. Power consumption 20 mW
Control	20 kHz / 7,5Vrms
Control times	0,3 sec. (fade in); 1,0 sec. (fade out)
Wiring	2-wire, max. 2,5 mm²; Loop max. length 1.000 m Cable outer diameter max. 13 mm
T branch (cable end)	max. 50W / EoL = 47 kOhm; 0,25 W or higher
Speaker type	only with DC blocking capacitor (TRK-001 A)
Detection - LOOP	short circuit, open circuit, earth fault
Surface mounting	Mounting on the speaker
Connections	3-pin 5-mm WAGO plug-in terminal; Ring line input (L +, L-, GND) 0,8-2,5 mm² Ring line output (L +, L-, GND) 0,8-2,5 mm² Speaker (L +, L-, GND) 0,8-2,5 mm² LED Connection (L +, L-) 0,8-2,5 mm²
Housing / Pretection class	ABS, with transparent cover; IP 21C
Dimensions (WxHxD)	110 x 130 x 55 mm
Weight	150 g
Certification	EN54-17:2005 / 0560-CPR-142190002

Model designation

Ringbus Isolator . . . . **TRT-200 A**
IP 21C, incl. Cover

EN 54-17 certified

MADE IN EUROPE

NEW

Certification No.
0560-CPR-142190002

Ring bus IN Display

Ring bus OUT Display

Ring line (input)

Ring line (output)

EOL switch

Reset button

Speaker connection

Volume controller connection

Mounting directly on the speaker is possible

TRT-400 A

+
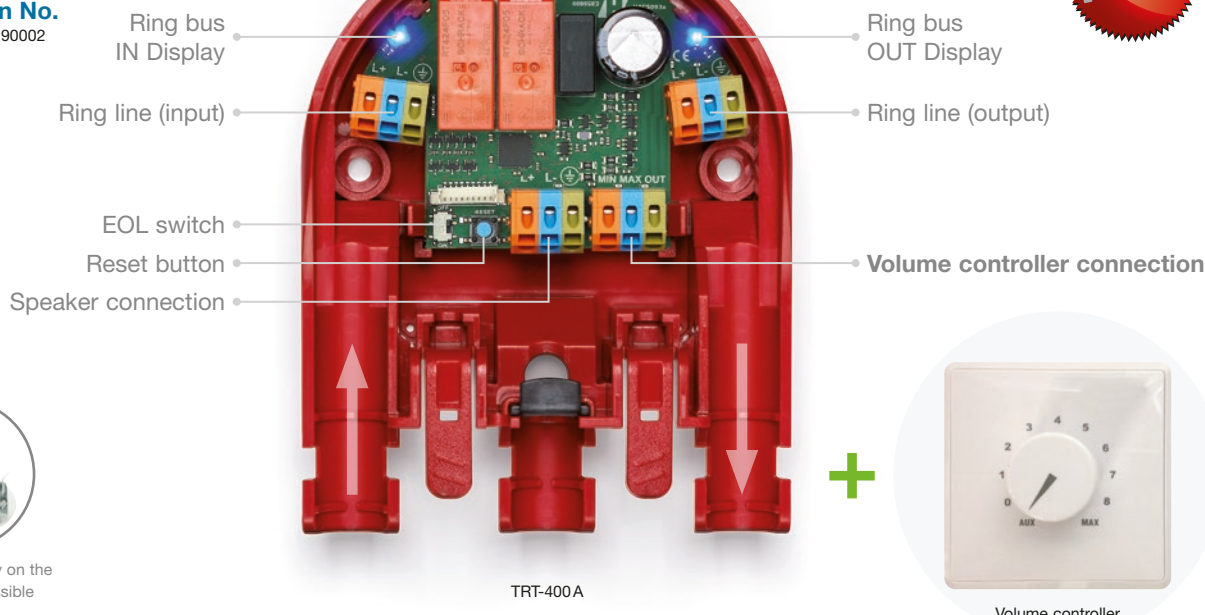
Volume controller

Description

The connection device for loudspeakers with volume control TRT-400 A is an EN 54-17 certified module in electro-acoustic emergency warning and voice alarm systems.

The connection device has no isolating function, which is why it is always used between two isolators (TRC-800 A or TRT-200 A).

The TRT-400 A ring bus module with 60 W volume control can be used in two different ways:

1. **Individual adjustment:** to individually adjust the volume of a subordinate background sound system.

2. **Own 100 V program:** to cue-in your own background sound through the connected speaker line

In both cases, the volume control is bridged in the case of an alarm or priority announcements. The supply and control runs trough the higher-level loudspeaker ring bus line.

Please consider the following features:

- Detection and isolation of short circuits in the adjacent loudspeaker lines.
- Detection and isolation of interruptions, short circuits and overloads at branch points.
- Individual volume adjustment in rooms.
- Recording of your own 100 V program via the connected loudspeaker line.

★

Technical data	TRT-400 A
Power supply (via TRC-800A)	19 - 30 V DC, nominal voltage 30 V DC
Power consumption	Idle current 100 μA continuous max. Power consumption 20 mW
Control	20 kHz / 7,5Vrms
Control times	0,3 sec. (fade in); 1,0 sec. (fade out)
Wiring	2-wire, max. 2,5 mm²; Loop max. length 1.000 m Cable outer diameter max. 13 mm
T branch (cable end)	max. 50W / EoL = 47 kOhm; 0,25 W or higher
Speaker type	–
Detection - LOOP	short circuit, open circuit, earth fault
Surface mounting	Mounting on the speaker
Connections	3-pin 5-mm WAGO plug-in terminal; Ring line input (L +, L-, GND) 0,8-2,5 mm² Ring line output (L +, L-, GND) 0,8-2,5 mm² Speaker (L +, L-, GND) 0,8-2,5 mm² 2x changeover contact (MIN, MAX, OUT) 0,8-2,5 mm²
Housing / Pretection class	ABS, with transparent cover; IP 21C
Dimensions (WxHxD)	110 x 130 x 55 mm
Weight	160 g
Certification	EN54-17:2005 / 0560-CPR-142190002

Model designation

Ringbus Module, with volume controller 60W. . . . . **TRT-400 A**
IP 21C, incl. Cover

VARES LOOP

Use of the DC blocking capacitor (TRK-001 A)
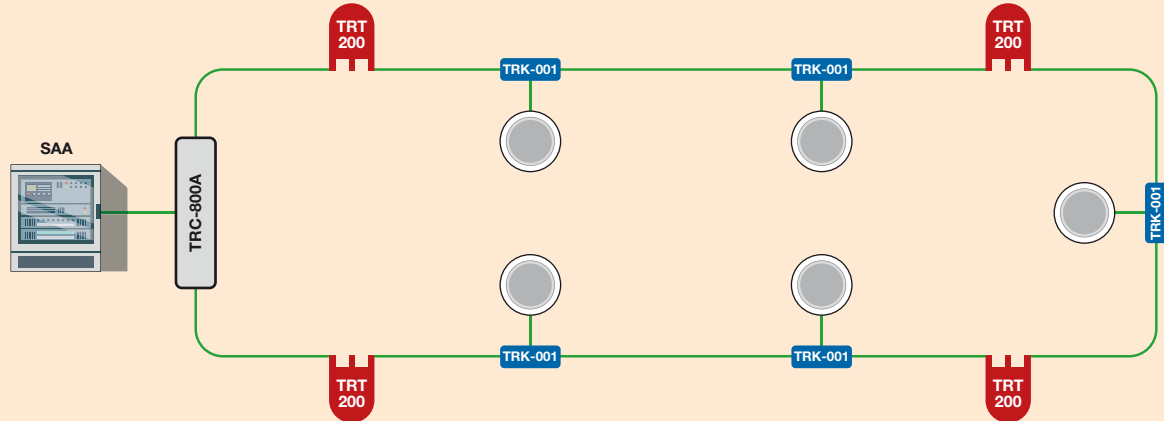
Use of the end-of-line module (TRA-001 A)

VARES-LOOP accessories

Ring bus termination (EOL)

The TRA-001 A ring bus termination (end-of-line module) is used to terminate a 100 V line.

If more than one loudspeaker is connected to the T-branch of the Ring bus isolator, the end-of-line module must be used.

The module is connected to the last loudspeaker of a branch line in the VARES-LOOP system.

Ringbus-Abschluss.....**TRA-001 A**
(end-of-line module)

DC Blocking Capacitor

Loudspeakers in the VARES-LOOP system must always be connected via a DC blocking capacitor.

DC Blocking Capacitor TRK-001 A
Please note: every speaker in the system requires a DC blocking capacitor.

Programming adapter RS485

The programming adapter (RS485 / USB) enables the connection of a PC with the VARES-LOOP ring bus system.

With the help of the VARES-LOOP system software, the ring bus isolators in the ring bus can be checked, operated and analyzed. Faults in the line network can be localized and isolated in a matter of seconds.

Programmier Adapter...**TRP-485 A**
(RS485 to USB)

VARES LOOP RING BUS SYSTEM

EN 54-17 CERTIFIED

R·C·S

NEW

EN 54-17 certified

Certification No.
0560-CPR-142190002

Ring bus IN Display

Ring bus OUT Display

Ring line (input)

Ring line (output)

Reset button

Relay contact 1

Relay contact 2
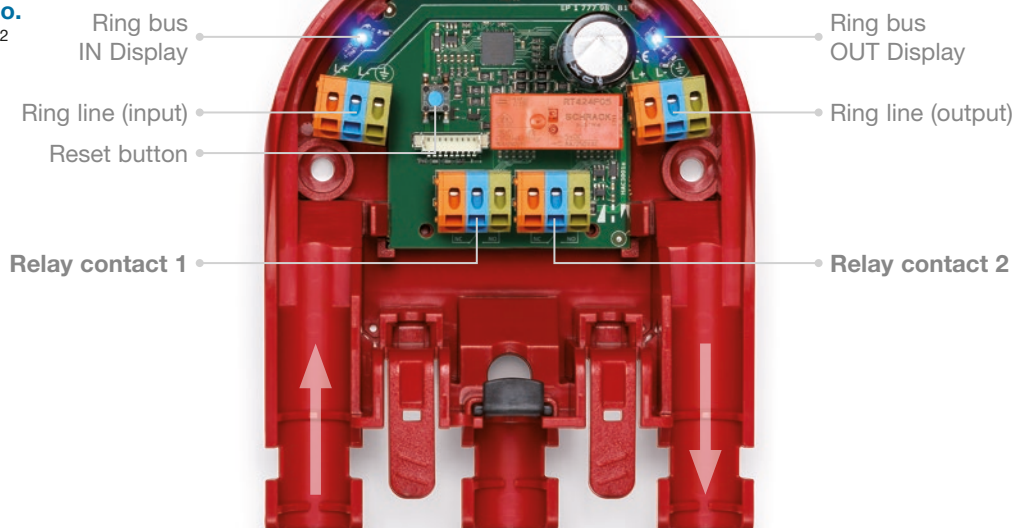
TRT-300 A

Description

The ring bus module TRT-300 A is an emergency switching device and not a ring bus isolator. It is looped into the ring bus in order to automatically switch off the subordinate sound system in the event of an alarm or an emergency announcement.

The ring bus module has two potential-free changeover contacts (230 V AC / 8 A). For example, in the event of an alarm, the first relay contact can switch on flashing lights and the second relay contact can switch off the loudspeakers. This

enables priority circuits to be activated via the 100 V loudspeaker line. This is necessary if priority alarms or announcements have to be imported into the affected area.

Power is supplied via the ring line. A capacitor that is charged by the ring bus controller holds sufficient energy for at least two emergency cycles.

Please consider the following features:

- Two potential-free heavy current relay contacts (230 V AC / 8 A) for automatic interruption of the subordinate own program, e.g. for emergency announcements.
- Power is supplied via the ring line. It stores energy for at least two emergency cycles.
- In addition to the priority switch, additional attention displays (e.g. strobe lights) can also be switched.

★

Technical data	TRT-300 A
Power supply (via TRC-800A)	19 - 30 V DC, nominal voltage 30 VDC
Power consumption	Idle current 100 µA continuous max. Power consumption 20 mW
Control	20kHz / 7,5rms
Control times	fade in: 0,3 sec. / fade out: 1,0 sec.
Wiring	2-wire, max. 2,5 mm²; Loop max. Lännge 1.000 m Cable outer diameter max. 13 mm
Relaiskontakt (2x)	max. 250 V AC / 8 A (Dual-State-Typ)
max. AC-Schaltlast	1800 W (230 V AC / 8 A)
Detection - LOOP	short circuit, open circuit, earth fault
Surface mounting	Mounting on the speaker
Connections	3-pin 5-mm WAGO plug-in terminal; Ring line input (L +, L-, GND) 0,8-2,5 mm² Ring line output (L +, L-, GND) 0,8-2,5 mm² 2x changeover contact (NO, COM, NC) 0,8-2,5 mm² –
Housing / Pretection class	ABS, with transparent cover; IP 21C
Dimensions (WxHxD)	110 x 130 x 55 mm
Weight	150 g
Certification	EN54-17:2005 / 0560-CPR-142190002

Model designation

Ringbus Module, with 2 relay contacts . . . . **TRT-300 A**
IP 21C, incl. Cover

ALERT

FOR 12 LINES

ELECTROACOUSTIC
EMERGENCY WARNING SYSTEM

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

for a maximum of system security

R·C·S CONTROL-CENTER VARES 1000
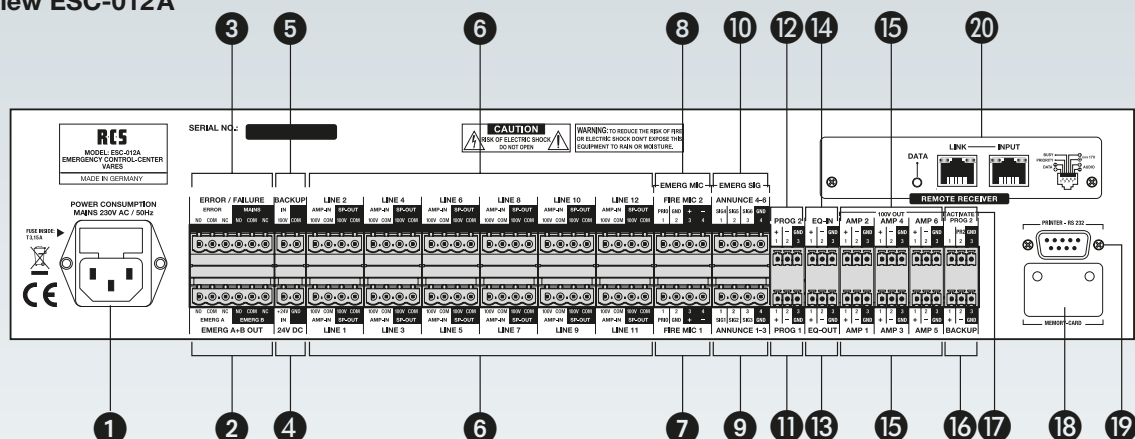
EN 54-16 CERTIFIED SYSTEM / DIN IEC 50849 / VDE 0828 CERTIFIED / COMPLIANT TO VDE 0833-4

Rear view ESC-012A

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 upervised 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

ELE-006 ELE-004
ELM-106

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.

★

Digital Microphone Station, Electret microphone with cardioid characteristic **ELM-106**

Digital Microphone Station, as ELM-106, but without interface RR-120 . . . . **ELM-106WO**

Button Extension Module, for ELM-106 to handle 12 call zones **ELE-006**

Function Extension Module, for ELM-106 to expand with further functions **ELE-004**

VARES 1000 CONTROL-CENTER

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

R·C·S

MADE IN GERMANY

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-012 A has been developped 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 increasd of 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.

- 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 amplifer 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).

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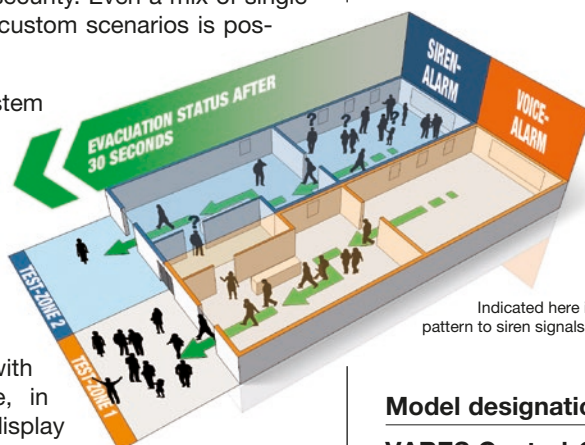
Indicated here is the different reaction pattern to siren signals or a spoken message.

Model designation

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

RCS

EXAMPLE OF USE VARES 1000
EN 54-16 CERTIFIED SYSTEM / DIN IEC 50849 / VDE 0828 CERTIFIED / COMPLIANT TO VDE 0833-4

COMPACT EMERGENCY WARNING SYSTEM

MADE IN GERMANY

MONITORED	NOT MONITORED

PRR-077 B
DCF-Receiveer
MAIN CLOCK
PTC-240 D

MIXING AMPLIFIER/CONNECTION PANEL
IMP-612 A

ELM-106 10
ELM-106 1

HMH-001 B ESM-100 D

BMZ

NF AUDIO SIGNAL PROG 2 PRIOR
NF AUDIO SIGNAL PROG 1 BGM

6 INPUT CONTACTS (MONITORED)	2 NF AUDIO INPUTS	REMOTE MIC

Control-Center

VARES 1000
ESC-012 A

MONITORED	MONITORED	MONITORED	MONITORED

BACKUP AMP
DBA-SERIES

AMP 1 – 6
1
6
DBA-SERIES

EMERG. POWER SUPPLY
ESP-2000 B/ESP-4000 B

LINE 1 A
LINE 1 B
LINE 6 A
LINE 6 B

FEATURES

Main functions of the system:

+ **Amplifier and Microphone Monitoring**

+ **Text Module & Digital Speech Memory**

+ **Mains voltage and battery monitoring**

+ **Connection of up to six power amplifiers possible**

+ **Monitoring of the fire alarm handover**

+ **Monitoring of the speaker lines**

+ **Automatic recording of error logs**

+ **Shutdown of all non-safety-relevant components in emergency announcements**

VARES 1000 ACCESSORIES

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

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-100 D**

VARES Software Languages
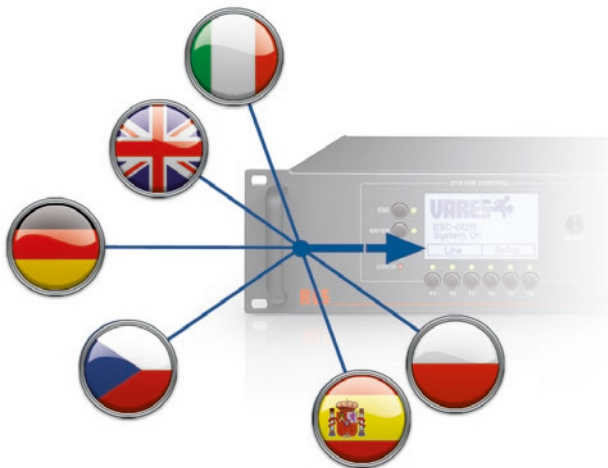
VARES Language Options

As alternatives to English and German ESC-012 A 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-020 H**

Housing and Mounting Panel for ESM-020 H

VCF-020 A   VMF-020 A

Description

The Mounting Panel VMF-020 A for the fire brigade microphone ESM-020 H 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-020 A 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-020 H is part of the certification to EN 54-16

Mounting Panel, for ESM-020 H .... **VMF-020 A**

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

19″ PA devices
AMPLIFIER, EMERGENCY POWER SUPPLY, MIXER
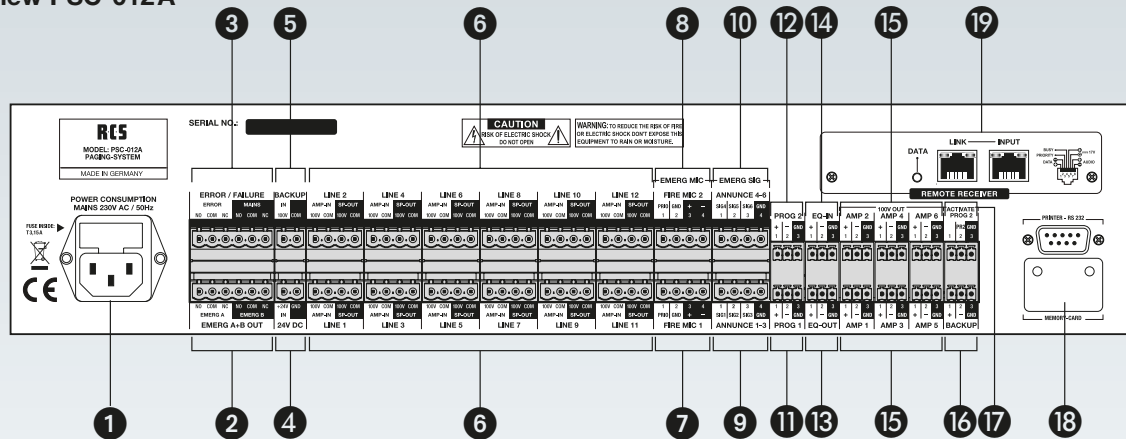
12-ZONES PAGING-SYSTEM

Rear view PSC-012A

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 (optional)
5. Input 100V Line from backup amplifier (optional)
6. Speaker line 1-12
7. Fire brigade call station 1
8. Fire brigade call station 2
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 (optional)
17. Contact input to activate program 2
18. Memory card for Textmessages
19. 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 upervised 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
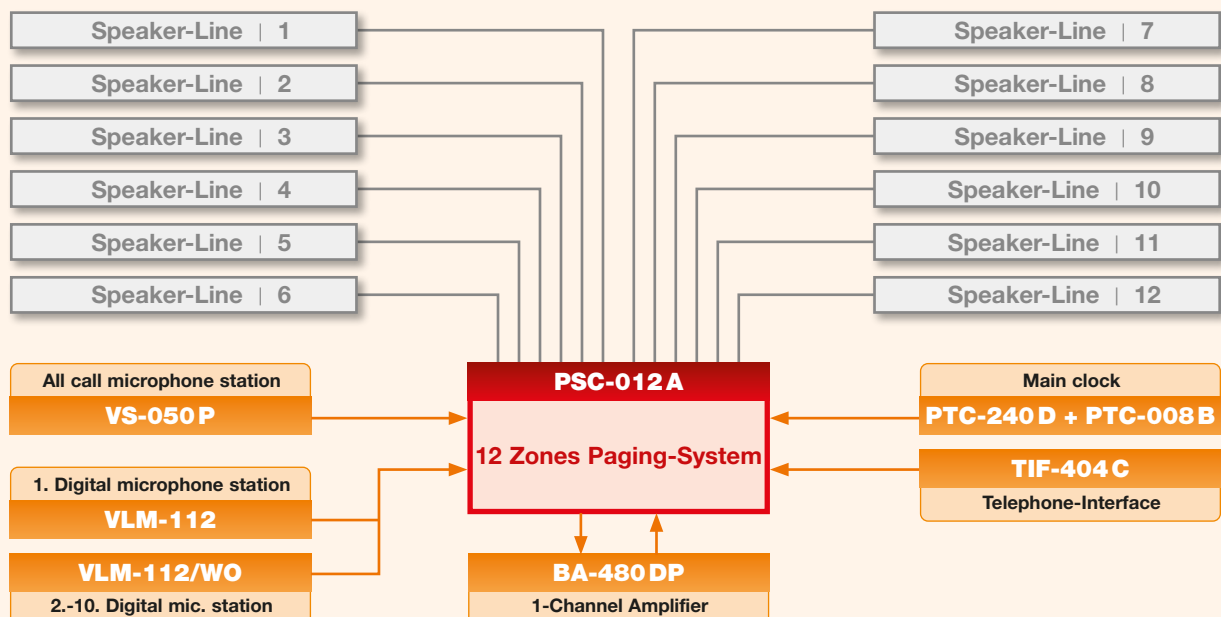
12-ZONES PAGING-SYSTEM

Description

The Paging-System PSC-012 A 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

VLM-112   VLE-004 (optional)

Digital Microphone Station, ... **VLM-112**
Electret microphone with cardioid characteristic, to control 12 lines

Digital Microphone Station, ... **VLM-112 WO**
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-012 A**

43

4-CHANNEL MATRIX PRE-AMPLIFIER

Rear view

❶ AC power supply connection cable

❷ 24 V DC power supply terminal

❸ Output for zones 1 - 4

❹ LOCAL INPUT, direct inputs, Jack 6,3 mm

❺ LINE 5, 6 Inputs Cinch

❻ REC OUT, 0dB, Cinch

❼ Monitor Out, 0dB, jack 6,3 mm

❽ MIC/LINE Inputs, combo jacks, XLR/jack 6,3 mm

❾ Connector for mic. station VLM-100 A

❿ PAGING-Input (with priority)

⓫ Contact to remote chime

⓬ Port for receiver-module RR-40 (optional), to connect microphone stations or MXM-104
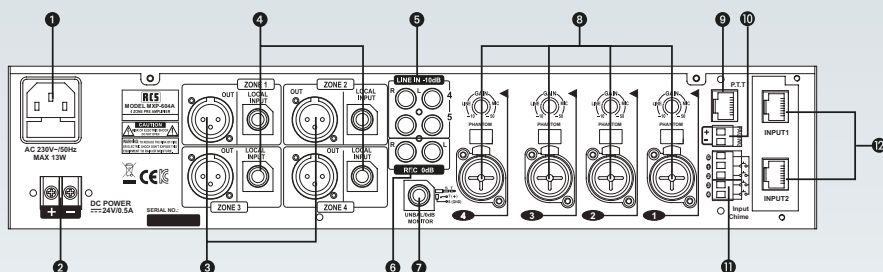
Technical data	MXP-604 A
Frequency range	20 Hz – 20.000 Hz (-3dB)
THD	MIC: better than 0,1% bei 1 kHz; LINE: 0,05% at 1 kHz
Noise level	MIC: better than 65dB; LINE: better than 87dB
Cross Talk	MIC: 60dB, LINE: 70dB
Inputs	MIC/LINE 1-4: -50 dBu (2.45 mV), 5 kohms, balanced
	MIC/LINE 1-4:-10 dBu (245 mV), 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-100 A**
digital, for MXA-4120 A or MXP-604 A

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-104 WO**
as MXM-104 but without interface RR-40

4-CHANNEL MATRIX PRE-AMPLIFIER

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-100 A** 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-100 A 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

4-CHANNEL MATRIX AMPLIFIER

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-100 A**
digital, for MXA-4120 A

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-400 W**
incl. text memory max. 60 s

① AC-power supply connection cable
② DC-power supply connector (24V DC)
③ FAULT, Fault relay
④ 100 V 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-100 A 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	100 V 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

MXA-4120 A

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-100 A.

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

DIGITAL 100V-POWER AMPLIFIER

Rear view
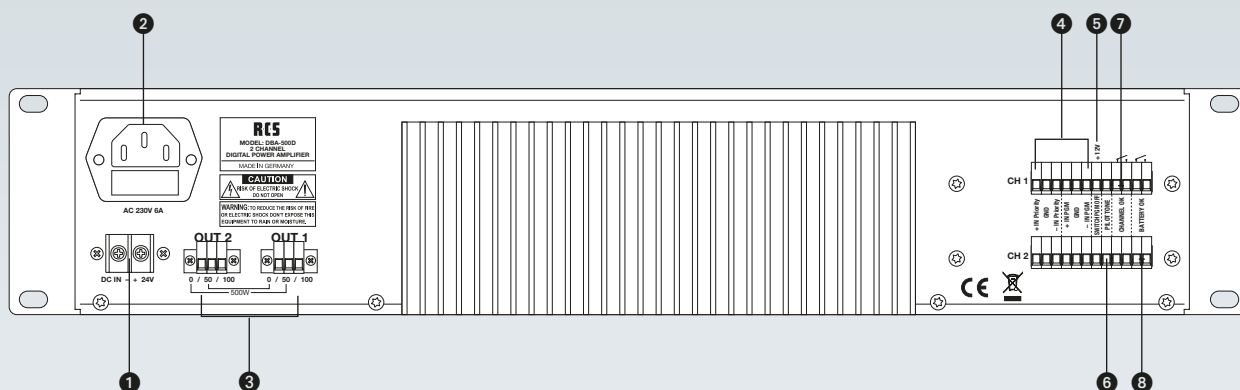
❶ DC-power supply terminal 24 V

❷ IEC power inlet (cold condition)

❸ Speaker outputs 50 and 100 V
at DBA-500 D for 500 W operation - Output 1 and 2 turn into series

❹ Balanced inputs,
at 500 W operation (DBA-500 D) 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 100 V	
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, acive 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

R·C·S

DBA-250 D
250 W

DBA-500 D
500 W

MADE IN GERMANY

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

energy-saving

Fanless cooling!

Description

With this digital 100 V 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.

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 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, 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-250 D**
250 W RMS, (2 RU)

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

Rear view
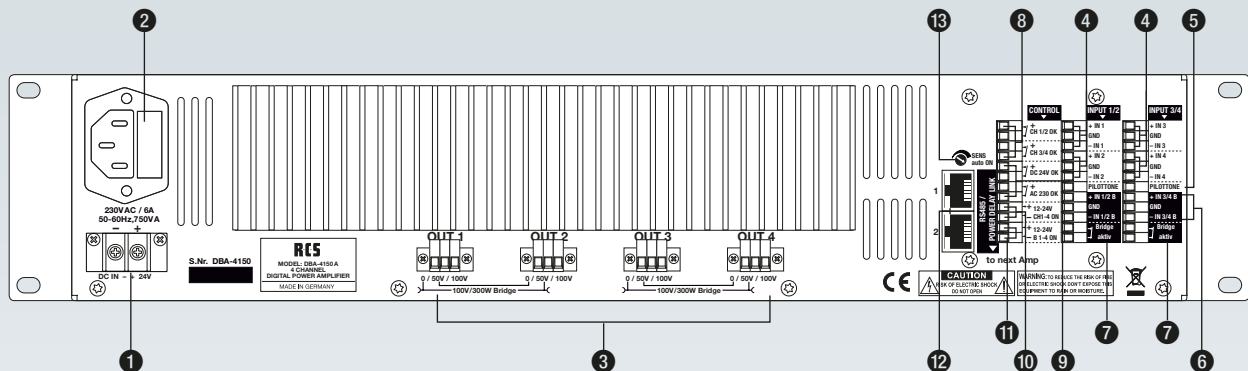
1. DC power supply terminal 24V
2. mains power connector
3. speaker outputs 50 and 100 V for 300 W operation, connect outputs 1 and 2 or 3 and 4 in series (only 50V connections)
4. symmetrical inputs (input), for 300 W operation, control inputs 1 + 2 and 3 + 4 together.
5. input for pilot tone signal
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	Sinue 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

R·C·S

DBA-4150 A
600 W
4x 150 W
2x 300 W

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

Fanless cooling!

energiesparend

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.

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

Drawing shows model DBA-4500 A
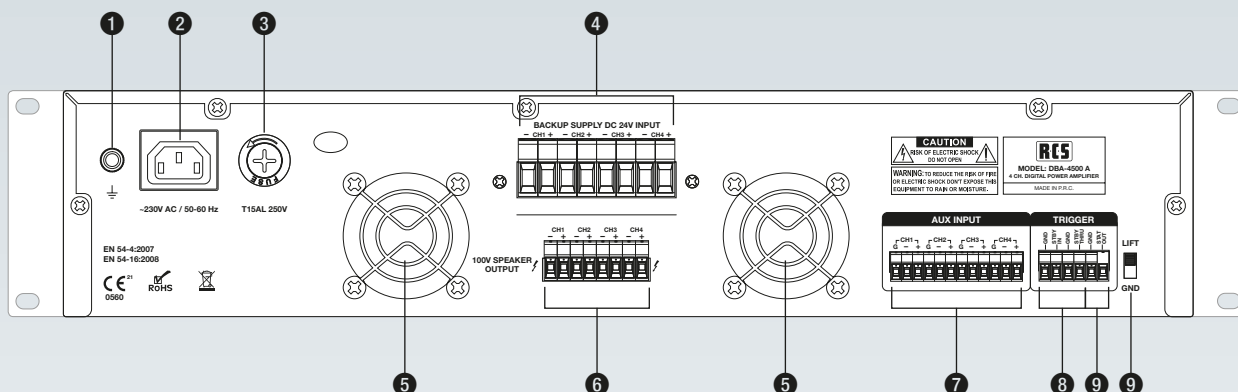
1. Ground connection

2. Mains IEC connector 230 V AC

3. Mains input fuse T15AL (DBA-4500 A)

4. DC power supply terminals 24 V DC (emergency power) for channels 1 - 4

5. Thermostat-controlled cooling fans (50/70 °C thermostat)

6. Speaker outputs 100 V, for channels 1–4

7. 4x AUX LF inputs
   (4 balanced audio inputs for program and signal supply)

8. Active standby switching and cascading

9. Output for status display to control an LED (5 V)

10. Lift / Ground switch

HIGHLIGHT

Output 1 – **500 W**

Output 2 – **500 W**

+ **Fully digital**

Output 3 – **500 W**

Output 4 – **500 W**

4 CHANNEL DIGITAL POWER AMPLIFIER **DBA-4500 A**

Technical data	DBA-2500 A	DBA-4500 A
Output power (program/RMS)	2x 750/500 W	4x 750/500 W
Input sensitivity	2x Aux; 0 dB, 10 kOhms, balanced	4x Aux; 0 dB, 10 kOhms, balanced
Output voltage	100 V	
Frequency range	80 - 16.000 Hz (better than -3dB)	
Signal to Noise Ratio	better than 85%	
Harmonic distortion (THD) at 1 kHz	better than 0,5%	
Protection circuit	according to IEC 268-3	
Power consumption (total)	1150 W	2260 W
Current consumption (total)	5 A	9,8 A
Power Supply AC	230 V AC, 50-60 Hz	
Power Supply DC	2x 24 V DC (emergency power)	4x 24 V DC (emergency power)
Dimensions (WxHxD)	484 x 88 x 445 mm; 2 RU	
Weight	8,0 kg	10,0 kg

DIGITAL 100 V AMPLIFIER

R.C.S

DBA-2500 A
1000 W
2x 500 W

DBA-4500 A
2000 W
4x 500 W

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

NEW

energy-saving

Description

Fully digital power amplifiers with 2 or 4 outputs each with 500 W RMS power at 100V.

The size of the housing enables high efficiency, minimal heat generation and additionally a reduction in the required installation space. The amplifiers have protective circuits and monitoring of voltage, current and temperature, with automatic separation of the outputs for short circuit and overload, thus avoiding overheating.

The digital power supply and the two or four independent amplifier (integrated in one housing) provide standards-compliant and redundant use in alarm systems.

Several LEDs are available for visual control. These provide information about the pending signal, clip, the protect circuit or the supply of voltage.

Please consider the following features:

- Two or four emergency power inputs (24V DC)
- The devices have separate speaker outputs (100 V) on screw-type connectors.
- Symmetrical controlled LF inputs on screw-type connectors, whereby the wiring complexity is reduced significantly.
- Special protective circuits against short circuits, overheating and overloading are among the features of this amplifier series.
- Active and remote-controlled standby switch for low power consumption.

- The thermally controlled fans (only switch on briefly during sine full load operation) ensure effective cooling of the amplifier so that overheating is avoided.
- Compliant with the EN 54-4 and EN 54-16, as well as part of the certification of the VARES-3000 system.
- Suitable for A/B operation thanks to the integrated, redundant power supplies.

★

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

Model designation

2-Channel Power Amplifier..................**DBA-2500 A**
2x 500 W RMS, (2 RU)

4-Channel Power Amplifier..................**DBA-4500 A**
4x 500 W RMS, (2 RU)
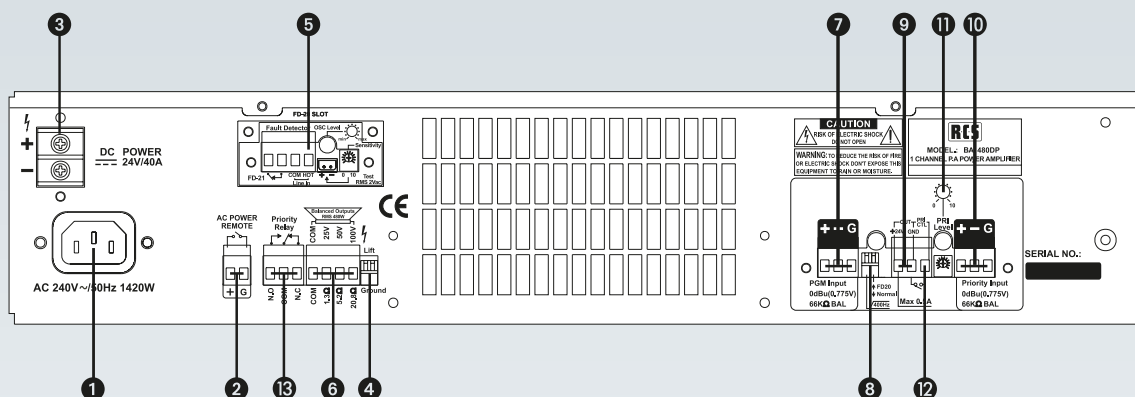
1-CHANNEL POWER AMPLIFIER WITH PILOT TONE

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-240 DP	BA-480 DP
Output power	240 W (RMS)	480 W (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, 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)
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	735 W	1420 W
Current consumption (230 V)	1,6 A at 1/8 power current draw	3,1 A az 1/8 power current draw
	3,75 A at rated power current draw	7,4 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 88 x 374; 2 RU	483 x 88 x 374; 2 RU
Weight	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. Error message from a potential-free relay contact (closer).

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

1-CHANNEL POWER AMPLIFIER WITH PILOT TONE

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

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

1-Channel Power Amplifier, ...**BA-480 DP**
480 W RMS, 2 RU, prepared for FD-21

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

Rear view

❶ IEC power inlet (cold condition)
❷ Remote switch-on via „Power Remote"
❸ 24 V DC power supply terminal
❹ Ground / Lift switch
❺ Slot for pilot tone-module FD-21 (optional)
❻ Speaker outputs, 25 V, 50 V and 100 V
❼ Input on screw-type connectors

❽ Switches for high-pass filter (400 Hz) and FD-21 module
❾ 24 V (500 mA) output for switching external relays or similar units
❿ Balanced input for priority signal
⓫ Volume control for priority signal
⓬ Contact to activate priority
⓭ Switchover contact at priority

Technical data	BA-2240 DP
Output power	2x 300/240 W (Program/RMS)
Input sensitivity	0 dB (0,775 V), 66 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 0,5%
Input filter	400 Hz / -3 dB
Power consumption	1300 W
Current consumption (230 V)	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. 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. Error message from a potential-free relay contact (closer).
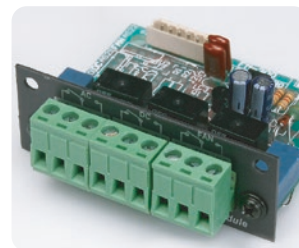

Pilot Tone-Module for power amplifiers of the „DP" series **FD-21**

2-CHANNEL POWER AMPLIFIER WITH PILOT TONE (OPTIONAL)

RCS

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 amplifier 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 ground/lift switch is provided to disconnect signal ground from chassis ground (shielding), in order to avoid any hum pick-up.

★

Model designations

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
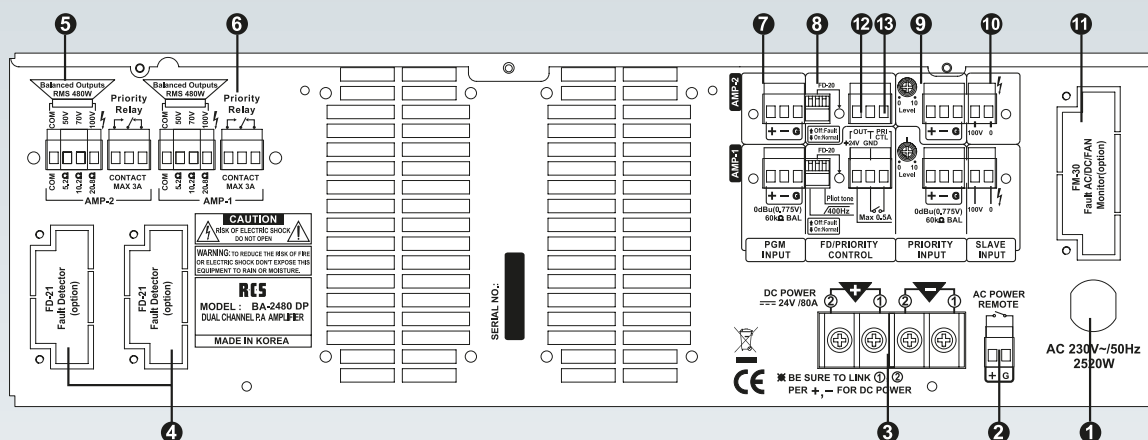
1. IEC power inlet (cold condition)
2. Remote switch-on via „Power Remote"
3. 24 V DC power supply terminal
4. Slot for pilot tone-module FD-21 (optional)
5. Speaker outputs, 25 V, 50 V and 100 V
6. Change-over contact for priority
7. Input on screw-type connectors
8. Switches for high-pass filter (400 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-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, 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	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. 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. Error message from a potential-free relay contact (closer).

Pilot Tone-Module **FD-21**
Extension-Module fot 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)

R·C·S

BA-2480DP
960 W
2x 480 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 amplifier 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
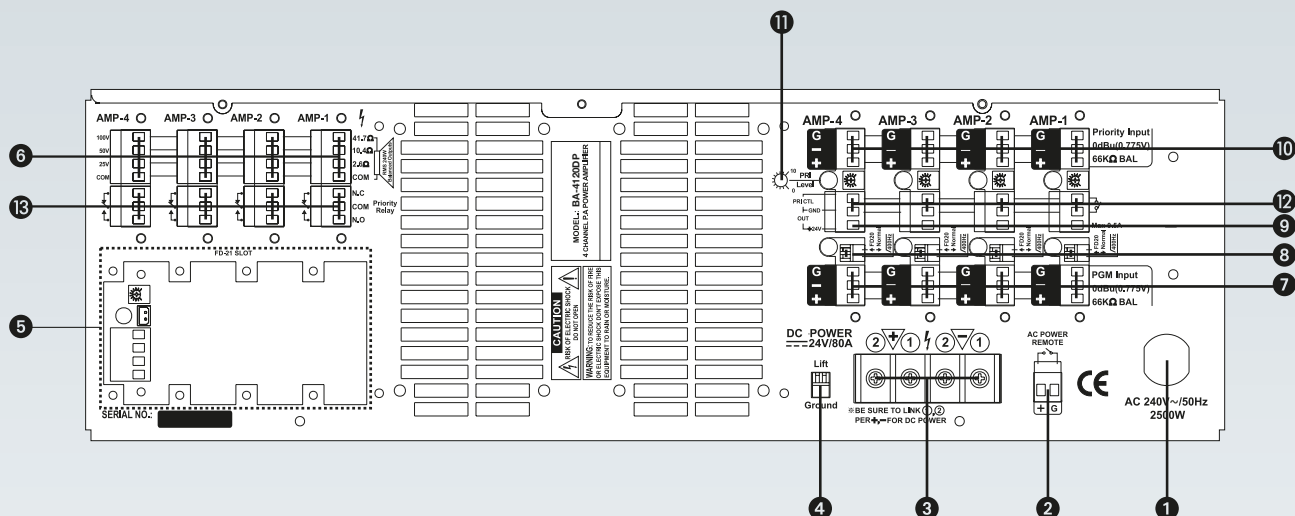
59

RCS 4-CHANNEL-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 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, 100V
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. Error message from a potential-free relay contact (closer).
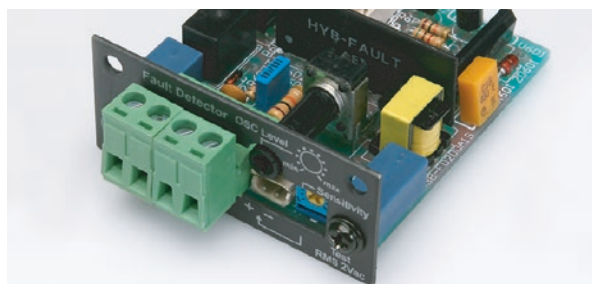
Pilot Tone-Module for power amplifiers of the „DP" series **FD-21**

4-CHANNEL-AMPLIFIER WITH PILOT TONE (OPTIONAL)

RCS

BA-4120 DP
480 W
4x 120 W

BA-4240 DP
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 amplifiers have fault message contacts for all functions that are relevant in an 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 four electronically balanced audio inputs for programs and four further inputs (with priority) for priority announcements, etc.

- Each power amplifier can be equipped with a pilot tone-module (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

UNIVERSAL AMPLIFIER MONITORING

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

MADE IN GERMANY

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 simultaneaously. 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-820 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 100 V 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-802 A can be installed to intercept all 10 amp outputs.

★

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".

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 tho 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-Udate
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**

EMERGENCY POWER MANAGEMENT

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

RCS

MADE IN EUROPE

EN 54-4 certified

CE 1438

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. 27,1 V DC	approx. 2x 27,1 V 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

❶ Connection for two 24V batteries and 2 ports to balance the medium voltage

❷ 6 outputs for amplifier connection

❸ Double socket for connection of the mains voltage control and other modules

❹ Connection for temperature sensor

❺ 3 Outputs for singals (Mains-, Bat- and Gen-Fault)

❻ 2 inputs for external error signals

❼ RJ-45 connector (Ethernet connection)

❽ AC IEC connector inlet

Rear view
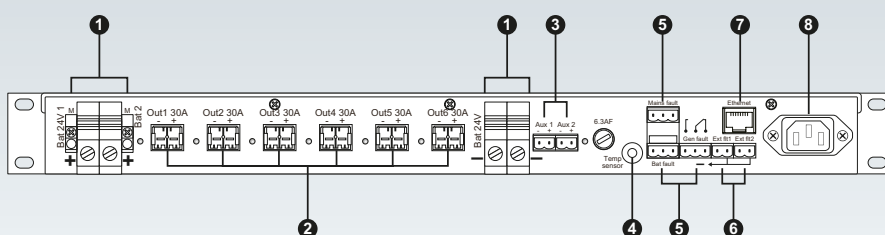
Model designations

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**
Lead Acid Battery-Set, for external operation (78 Ah)...	**BA-160**

R·C·S

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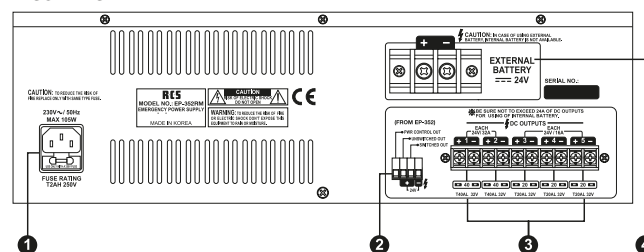
❶ Power- and low power jack
❷ Power control unit (here a deactivation of an automatic commutation to DC power is possible for maintenance purposes)
❸ 24V DC connecting clamp for emergency power supply of the amplifier
❹ Screw terminal in order to connect any external battery

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

Automatic Charger, (3 RU) . . . . **EP-352 RM**
incl. emergency power management
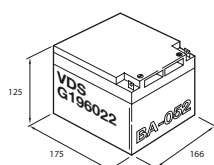
VDS-Nr. G196022   VDS-Nr. G196023
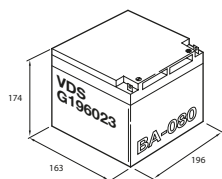
These lead-accumulators are maintenance free. The operation of the EP-352 is either possible with a built-in (BA-052) <u>or</u> with an external (BA-052 or BA-080) lead-accumulator set.

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

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

Description

This emergency power management ESP-500 A 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
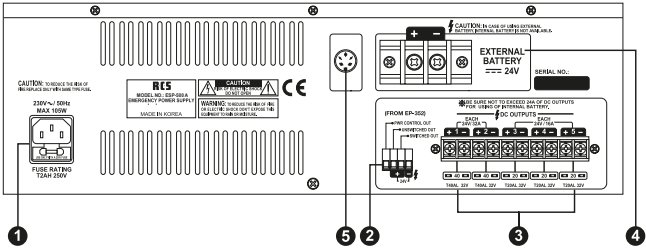
❶ Power- and low power jack
❷ Power control unit (here a deactivation of an automatic commutation to DC power is possible for maintenance purposes)
❸ 24 V DC connecting clamp for emergency power supply of the amplifier
❹ Screw terminal in order to connect any external battery
❺ Failure announcement contact

Technical data	ESP-500 A
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-500 A**

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

RCS

SPEAKER LINE MONITORING UNIT

Connecting Diagram

POWER AMPLIFIER

SPEAKER

Signal input

Signal output

IN OUT IN OUT IN OUT IN OUT IN OUT IN OUT IN OUT IN OUT

CH1 CH2 CH3 CH4 CH5 CH6 CH7 CH8

Relais

| RL 9 | RL 1 | RL 10 | RL 2 | RL 11 | RL 3 | RL 12 | RL 4 | RL 13 | RL 5 | RL 14 | RL 6 | RL 15 | RL 7 | RL 16 | RL 9 |

RELAY BOARD RSC-132 A
(8 CHANNEL)

CONNECTOR

Relay board

SUB D-Connection cable
to RSC-132 A

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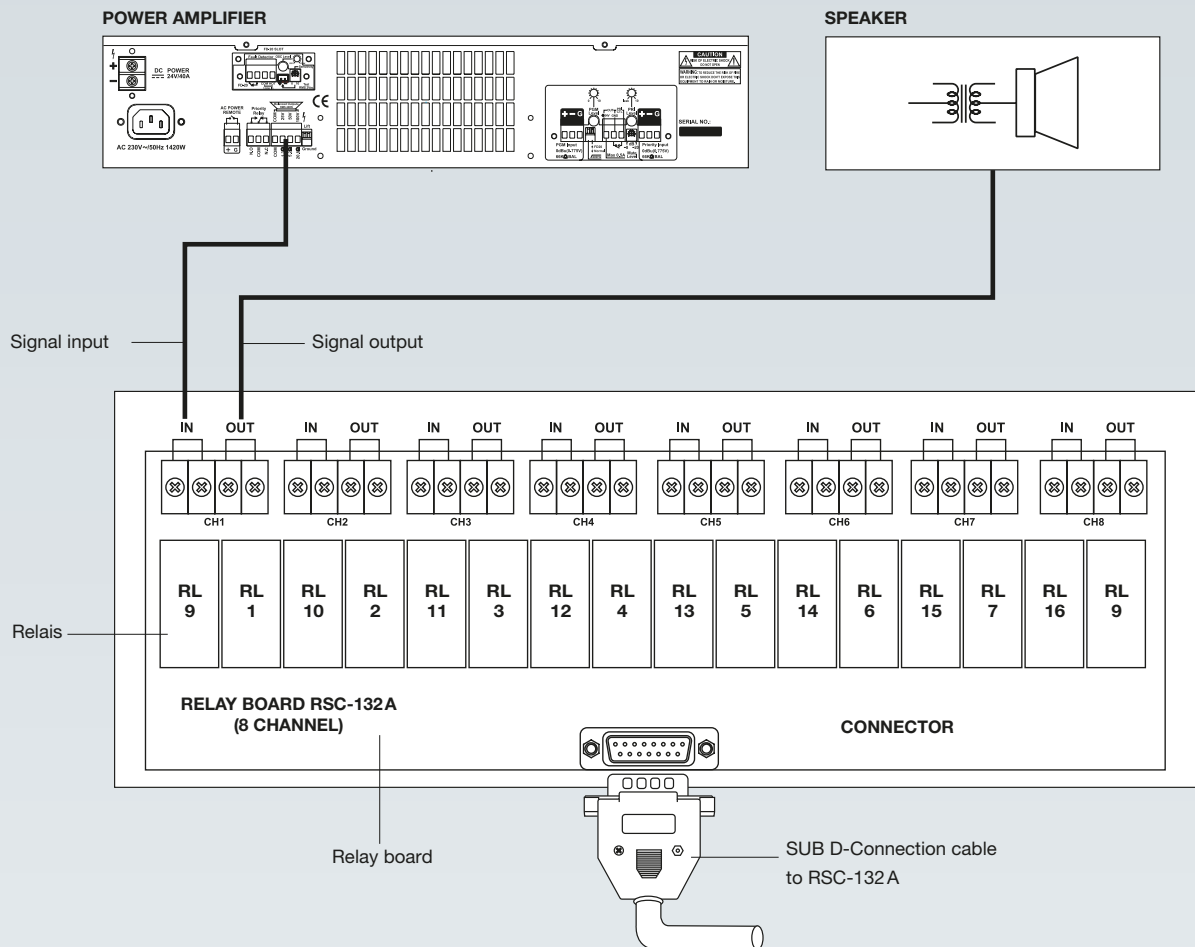
❶ Line selector button
❷ Check button for checking the re-spective line
❸ Setting of the measuring intervals (hour/minute)
❹ LCD
❺ Button for saving the measured values
❻ LED for visual fault indication
❼ Button for deactivating the buzzer
❽ Power switch

RCS SPEAKER LINE CHECKER RSC-132A

RSC-132 LINE CHECKER

CHANNEL SELECTOR   CHECK   INTERVAL HOUR MINUTE   MEMORY FAULT BUZZER OFF   POWER

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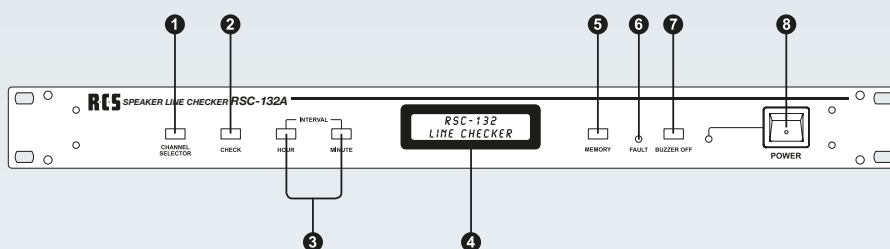
❶ 230 V power inlet
❷ Fuse holder
❸ Terminal for 24 V emergency power supply
❹ Contact for interrupting the meas-urement
❺ Make contact in the case of faults
❻ Make contact during measurement
❼ Connections for the relay boards
❽ Line switch for activation of lines

AC 230V~/50Hz 23W   FUSE RATING   DC POWER 24V/0.5A   Measuring disabled Fault Make contact during measurement   RELAY BOARD-4 Channel 32...25   RELAY BOARD-3 Channel 24...17   RELAY BOARD-2 Channel 16...9   RELAY BOARD-1 Channel 8...1

MODEL NO. RSC-132A   MADE IN KOREA   SERIAL NO.

SPEAKER LINE MONITORING UNIT

R·C·S
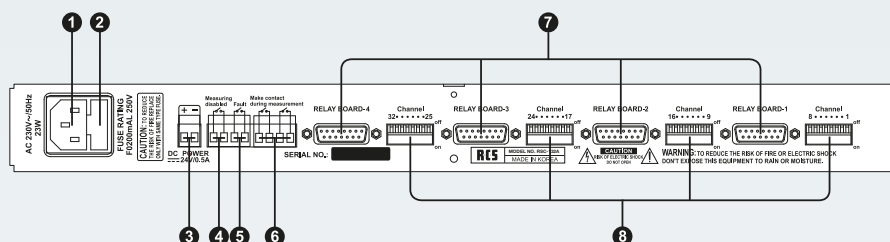
Description

The RSC-132A is a microprocessor controlled line moni-toring 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 mis-sing 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 permissi-ble 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 E2PROM.

- 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 an-nouncement 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 connec-ted 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.

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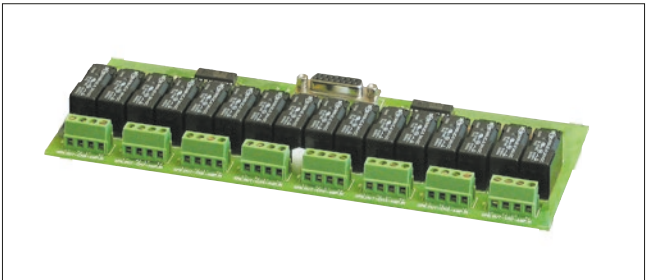
Technical data	RSC-132A/RSC-008A
Speaker circuits	8 (can be extended to up to 32)
Measuring time	100 ms per circuit
Measuring range	25 ohms – 1,6 kohms (6 W – 400 W)
Power consumption	23 W
Power supply	230 V AC/24 V DC
Dimensions in mm (WxHxD)	483 x 44 x 200 mm, 1 RU
Weight	3,0 kg

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
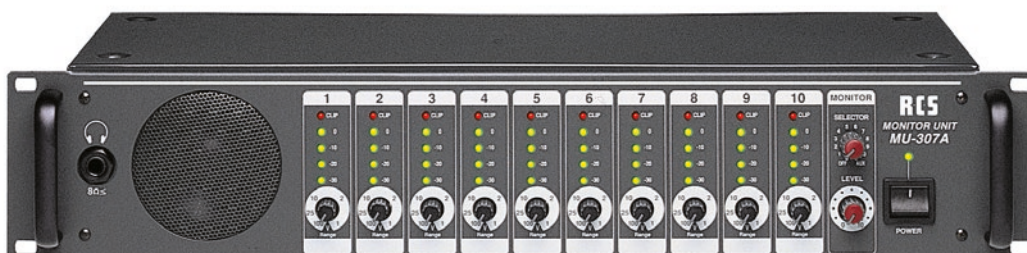
Description

The MU-307 A 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 100 V 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 – 100 V) 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 – 100 V (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

❶ IEC power inlet (cold condition)

❷ Terminal for 24 V DC (emergency power supply)

❸ Monitor input of preamplifier

❹ Monitor input of amplifier lines (1 V - 100 V)

Rear view
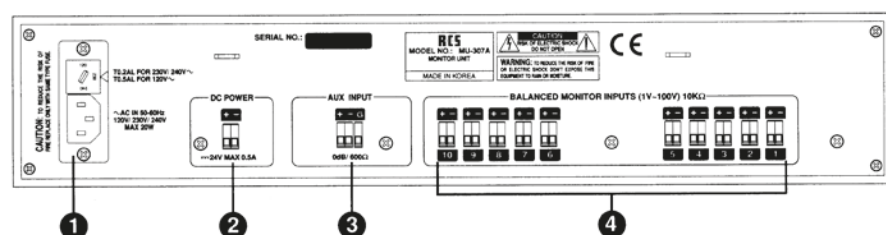
Model designation

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

MIXER PRE-AMPLIFIER 19˝ RACKMIXER

DESIGN + QC IN GERMANY

RJ-45 socket optional

NEW

Description

The IMP-612 A is a professional mixer preamplifier for general public address applications with two separate outputs and seven inputs. The volume and the sound can be controlled separately for each output.

The seven inputs are assigned by means of a pushbutton switch. Each of the seven inputs has its own gain control. The device can be operated with direct voltage 24V DC (e.g. emergency power supply).

The IMP-612 A has six line inputs (cinch / 3.5 mm jack / clamp) and a microphone input (XLR). All signals can be mixed together using an 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 push buttons (3 changeover contacts)
- 2 slots for optional further type D terminal unit, such as e.g. IMD-001A
- Very flat design for rack cabinet assembly

★

Technical data	IMP-612A
Operating voltage	24-30V
Current consumption (max.)	300mA
Inputs	AUX-1: 0dBu, unbalanced, stereo jack 3,5mm AUX-2: 0dBu, unbalanced, stereo cinch MICRO: -30dBu, balanced, XLR AUX-3 bis AUX-7: switchable, -30dBu/0dBu, balanced, 3-pin screw-plug terminal
Outputs	2x +3dBu (1kHz), balanced, 3-pin screw-plug terminal
EQ	Treble ±10dBu, Bass ±10dBu
Priority switching	Switching contact input (only with potential-free contact)
LED F1-F3	24V / DC. Power consumption per LED 20mA
Switching contacts F1-F3	max. 24V/DC 1A
DC power supply	24 V (emergency power supply)
Dimensions (WxHxD)	483 x 88 x 256 mm; 2 RU
Weight	0,95 kg

❶ Installation space for a max. of two optional Type D connection units

❷ Inputs F1-F3 (incl. LED color adjustment)

❸ 24V connection / priority for AUX3

❹ Button or switch function for F1–F3

❺ Signal outputs Master 1 & 2

❻ Microphone Phantom power

❼ Terminals for AUX3–AUX6

❽ Ground/Lift switch

Rear view
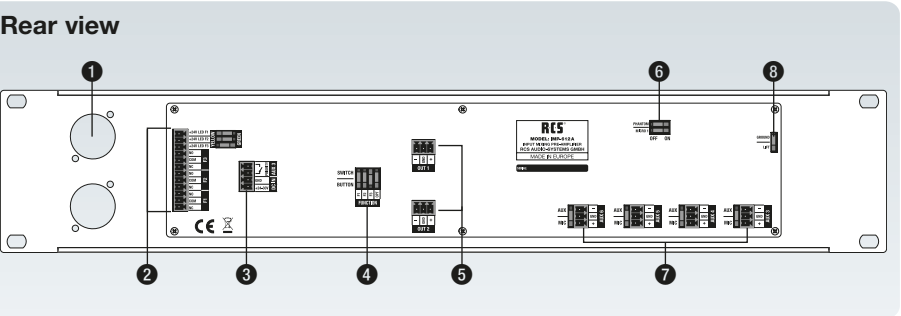
Model designation

Mixer Pre-Amplifier 19˝ Rackmixer, 2 RU **IMP-612A**

Built-in Socket Modul RJ-45, (for IMP-612A) **IMD-001A**

RCS

10-CHANNEL MIXER PRE-AMPLIFIER

Block Diagram
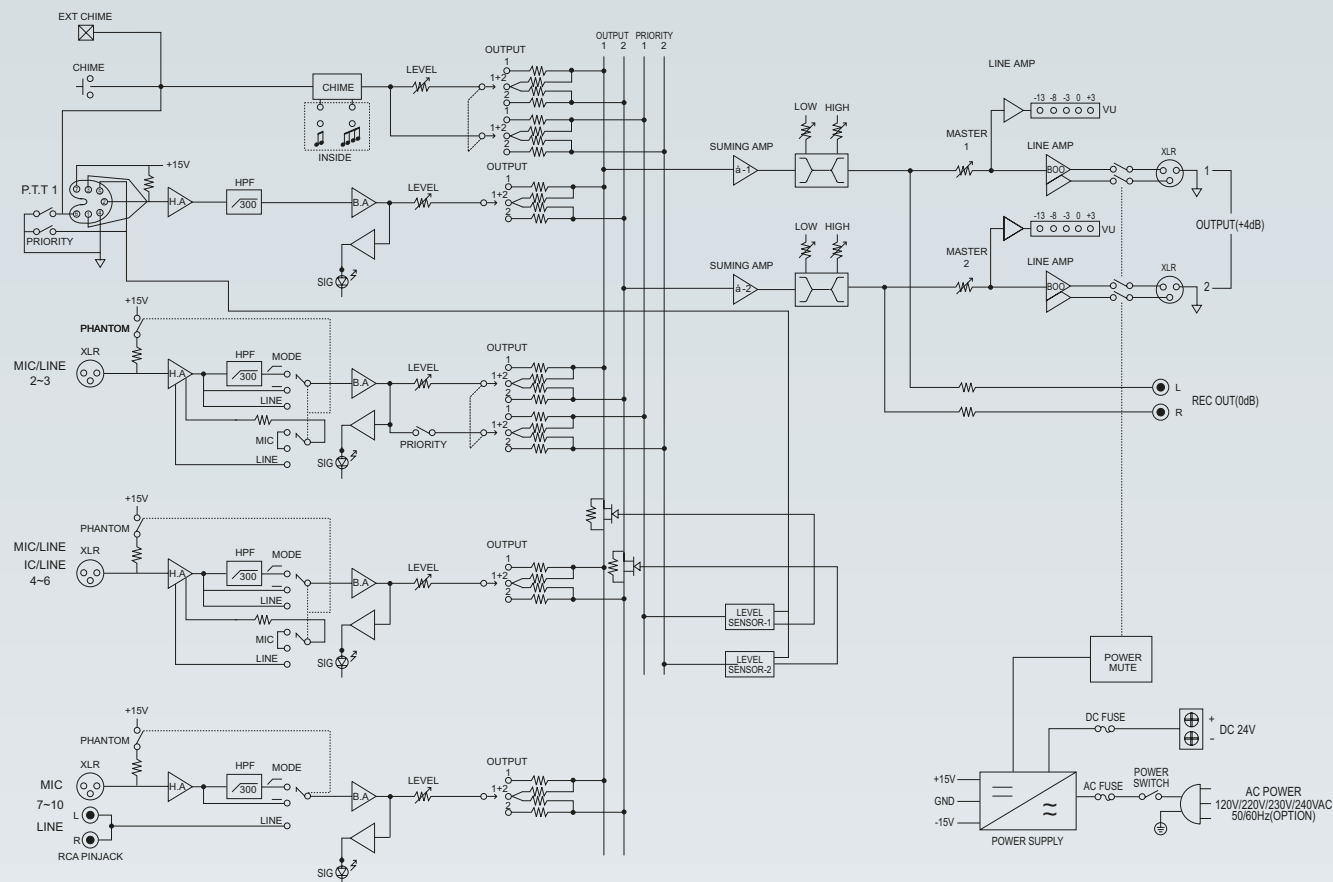
Front view

Rear view
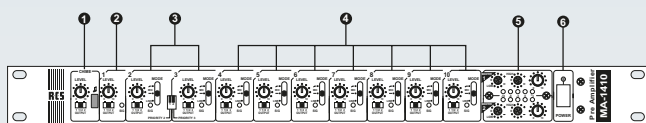
❶ Chime section with button for 2-tone chime (switachable to 4-tone chime), volume control and sliding switch for master output 1, 1 + 2, 2.

❷ P.T.T. input section with volume control and selector switch for master output 1, 1 + 2, 2.

❸ 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.

❹ 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.

❺ Master output section with output volume controls, dual-band equalizer and multicoloured 5-segment LED chains for output level.

❻ Power switch with power LED.
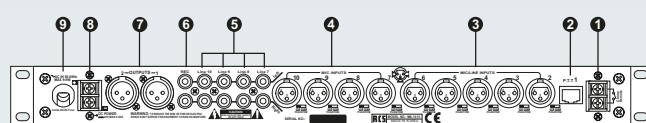
❶ Remote control connection for two-tone chime signal.

❷ RJ-45 socket for connecting the VLM-100A microphone station with pre-announcement chime and priority.

❸ Balanced XLR input sockets 2 to 6 with signal assignment for mic or line level.

❹ Balanced XLR input sockets 7 to 10 for mic signal.

❺ Unbalanced RCA sockets 7 to 10 for line signal.

❻ REC output to RCA sockets.

❼ Balanced XLR outputs for master output 1 and 2.

❽ Terminal for 24 V DC power supply.

❾ Power cord for 230 V AC.

10-CHANNEL MIXER PRE-AMPLIFIER

RCS

Description

The MA-1410 B 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-1410 B**

RCS   AMOK- & ADVERTISING TEXT SOLUTION

NF IN   NF OUT   priority contact   fault message

DMM-618 B

24 V DC

RS-232   **TIF-404 C**

TELE-PHONE SYSTEM

AB Phone Extension

release
fault message   **AAS-200 A**

GSM NETWORK

Mobile Phone

1   2   3   4   (up to 18 Contacts)   18

HMA-001 O   HMA-001 O   HMA-001 O   HMA-001 O   HMA-001 O
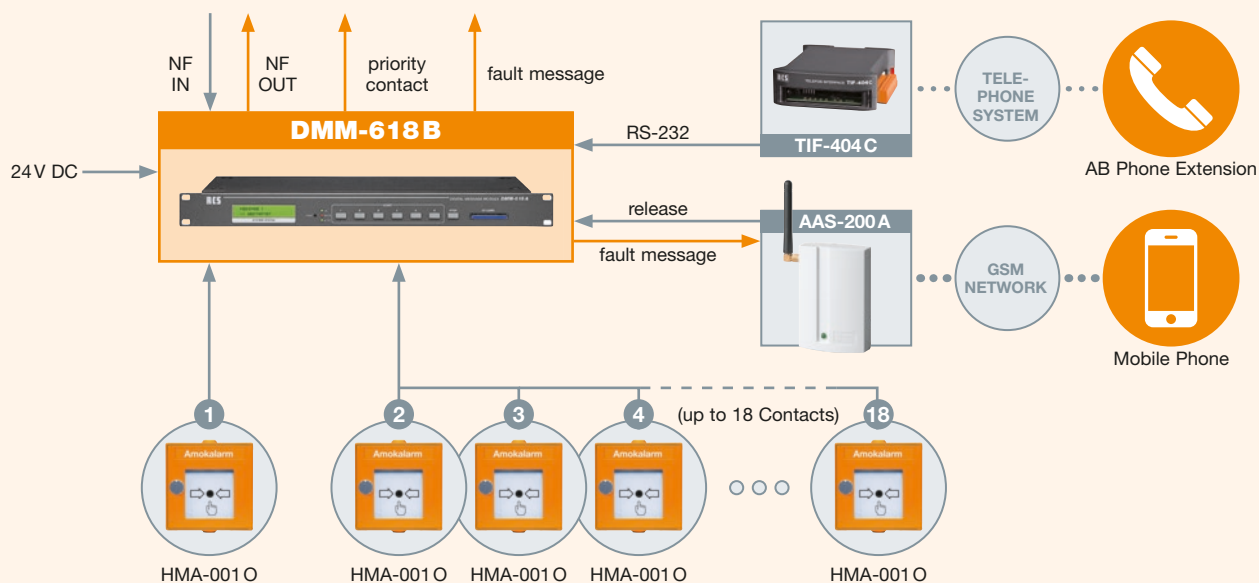
FEATURES

Features of the applications:

+ 18 texts triggered, via potenital 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

ADVERTISING TEXT

NF IN   NF OUT   priority contact   fault message

DMM-618 B

24 V DC

media control systems, house technology, etc.

RS-232

RS-232   **TIF-404 C**

up to 4 Contacts

TELE-PHONE SYSTEM

AB Phone Extension

PTC-240 D with 2x PTC-008

1   2   3   4   (up to18 Contacts)   18

Button, house installation or tableau, etc.

DIGITAL MESSAGE MODULE

R·C·S
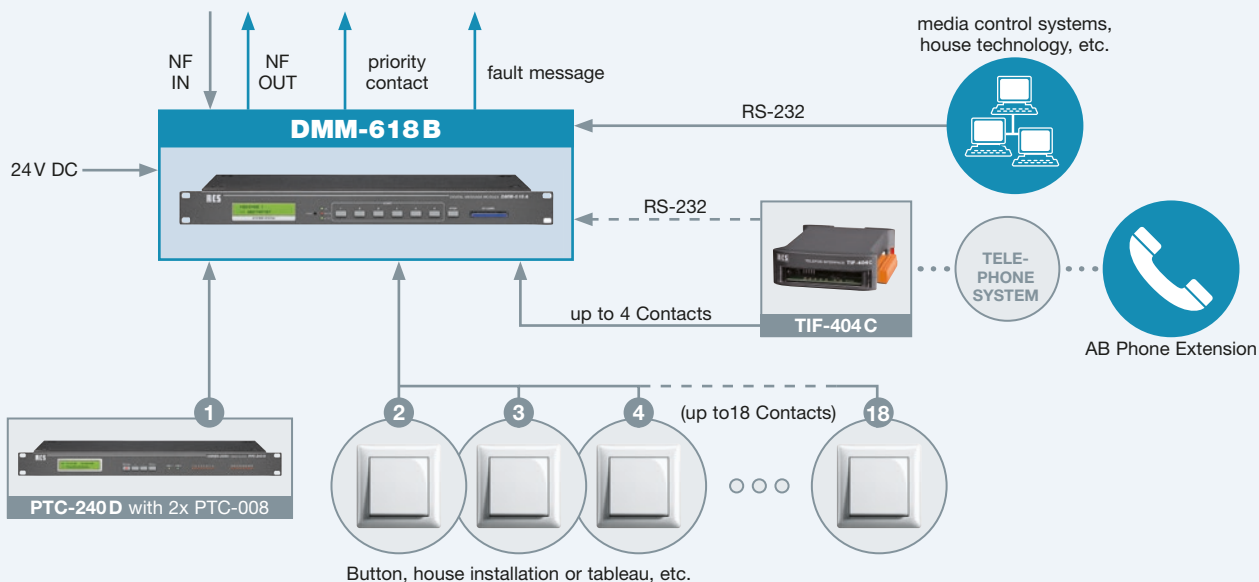
Description

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-618 B 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-240 D), from AAS-200 A 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 8 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.
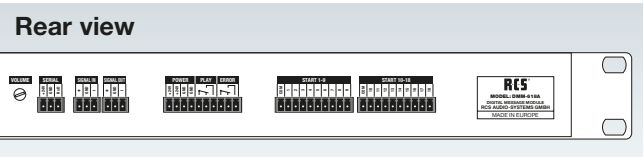
Application as moitored speech memory:

+ **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-200 A, 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-618 B
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 (FAT32 Format), max. 8 GB
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

Rear view

Model designation

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

MADE IN EUROPE

NEW

+ **You can find our regular slave clocks on the pages 104-105**

+ **Different slave clock variations available on request**

Custom-made products by combining the variants shown are possible on request. Please contact our Sales team on the phone number:

+49 8061-3501-0

clock face variants:
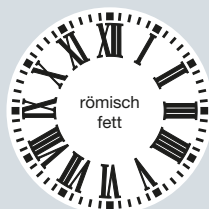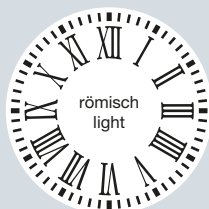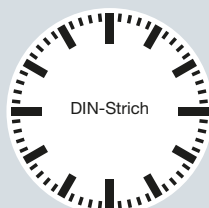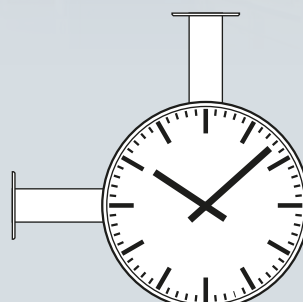
Schmalstrich

DIN-Strich

Zahlenblatt v1

Zahlenblatt v2

römisch light

römisch fett

Zahlenblatt v3

arabischer Stil

round
wall mounting (one sided)

round
wall or ceiling mounting (double sided)

square
wall mounting (one sided)

square
wall or ceiling mounting (double sided)

19˝ MAIN CLOCK

RCS

EVENT & TIME-SYNCHRONISATION

MADE IN GERMANY

DCF-Receiver
PRR-077 B

PRR-077B
VARES-3000 DCF BUS MODULE
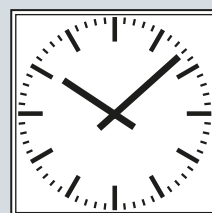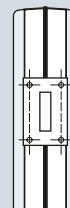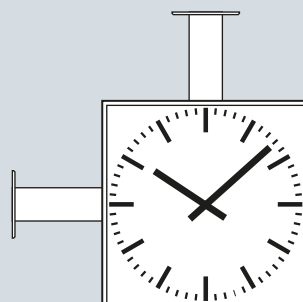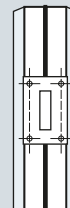
Description

This radio clock PTC-240 D 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-008 B 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-240 D 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-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	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-240 D (if Main Clock PTC-240 D is in use without the PSS-224 C).

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-240 D. . . . . **PTC-008 B**

Main Clock Programming adapter, for main clock PTC-240 D **PCA-300**

Main Clock AC adaptor plug 24 V, 2A, for main clock PTC-240 D **PSU-048/24**

75

AMBIENT NOISE CONTROLLER

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.

★

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

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

Front view

Rear view

❶ IEC power inlet (cold condition)

❷ Terminal for 24 V DC (emergency power supply)

❸ Balanced signal output socket.

❹ Balanced signal input socket.

❺ Control for reference level limiter

❻ Switch for disabling the reference level limiter.

❼ Balanced input for ambient noise detector.

Rear view
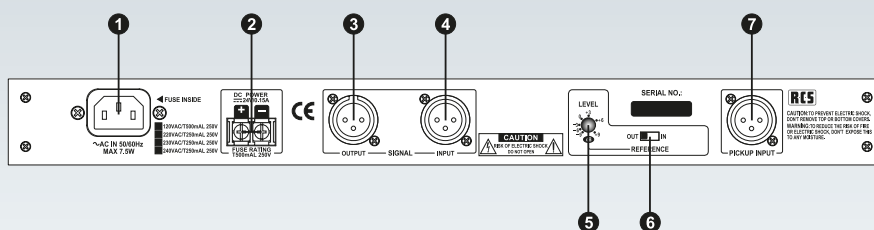
Model designation

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

PROFESSIONAL AUDIO-MIXER

RCS

19˝ mounting angles are optionally available.

+ 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**

RCS

PROFESSIONAL AUDIO-MIXER

+ 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	HIghs: 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 **FMX-1602**
19˝ Rack-Mounting-Kit, 8 RU **RMK-16**

PROFESSIONAL STEREO POWER-MIXER

RCS

+ 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**

14-CHANNEL POWER-MIXER

19″ mounting angles are optionally available.
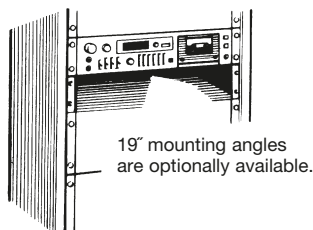
+ INPUT-SECTION

- 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.

Model designations

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

+ 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

16-CHANNEL POWER-MIXER

RCS

19″ mounting angles are optionally available.

+ 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-16 P" 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-16 P**

4 CHANNEL AMPLIFIER WITH DSP (DIGITAL)

Rear view
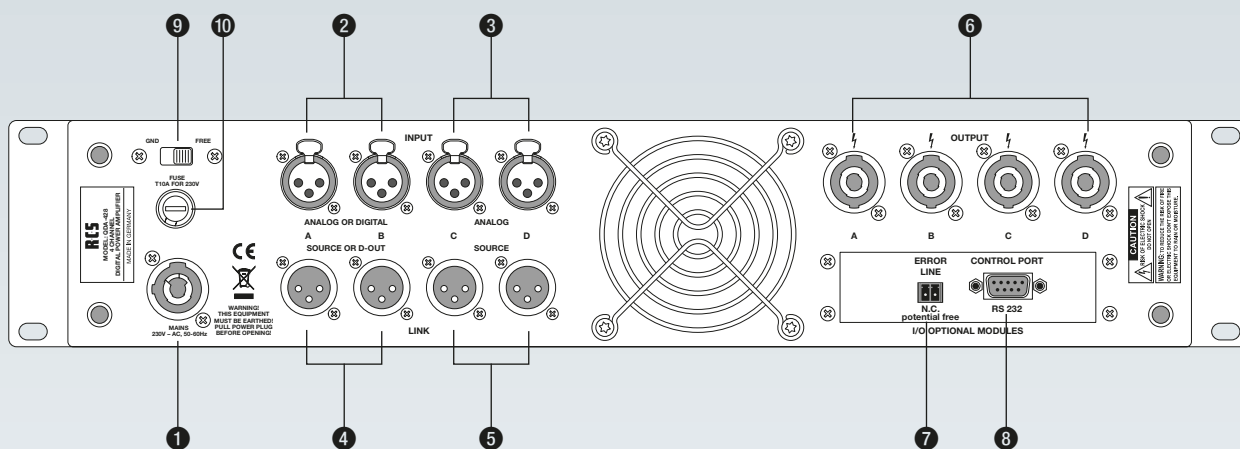
❶ mains input 230V AC (Powercon connection)

❷ audio audio inputs 1-2 (XLR-3M)

❸ audio audio inputs 3-4 (XLR-3M)

❹ AF audio outputs 1-2 (Link output, XLR-3F)

❺ AF audio outputs 3-4 (Link output, XLR-3F)

❻ outputs for loudspeakers (4-8 ohms)

❼ Error output (optional, potential-free contact)

❽ RS-232 interface (option module)

❾ ground lift switches

❿ 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-428A

2.800 W
4x 700 W

MADE IN GERMANY

MADE BY
K.M.E.

Description

The QDA-428 A 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-428 A 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).

★

Model designation

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

PRO-SOUND CLASS-D POWER AMPLIFIER

Front view

❶ **Power On/Off Switch**
Switch to turn the device on / off

❷ **Power/Standby LED**
Lights up if the devise is "on"

❸ **Error LED**
Lights up when a fault occurs

❹ **Mute LED**
Lights when an active protection circuit removes the input signal

❺ **Signal/Clip LED**
Signal: Lights up when gain from 100mV
Clip: Lights up when a too high input signal overload the amplifier

❻ **Input level control**
To adjust the volume of each
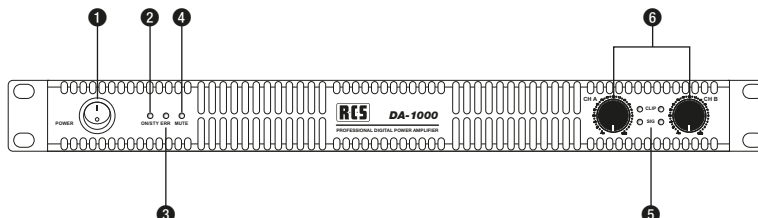
Rear view

❶ **XLR (balanced)**
Signal input for Channel 1

❷ **XLR (balanced)**
Signal input for Channel 2

❸ **Parallel connected „Link" - output on XLR**
for channel 1 for forwarding the input signal to other devices or amplifiers

❹ **Parallel connected „Link" - output on XLR**
for channel 2 for forwarding the input signal to other devices or amplifiers

❺ **Speakon®** Speaker output jack for channel 1

❻ **Speakon®** Speaker output jack for channel 2

❼ **Fan**
Temperature controlled cooling fans

❽ **AC mains connection**
To connect an IEC power connector 230V AC
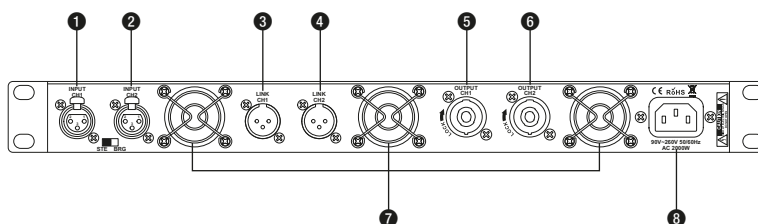
* The rear of the DA-200 is slightly different

Technical data		DA-200 A	DA-600
Output power (1 kHz, 0,1 % THD)	8 ohms – stereo	2x 200 W	2x 600 W
	4 ohms – stereo	2x 360 W	2x 1000 W
	8 ohms bridged	1x 720 W	1x 2000 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
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

PRO-SOUND CLASS-D POWER AMPLIFIER

RCS

| Class-D Power Amplifier · bridge operation possible |

energy-saving

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 protection circuits against open circuit, short circuit, over temperature and a delay is granted.

● The digital technology achieves a very high level of efficiency in the power amplifier, which results in very little heat generation (longer service life of the components in the amplifier) and relatively low power consumption.

● 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 A**
Pro-Sound Class-D Amplifier, 2x 1000 W **DA-600**

RCS

up to 450 m² **INDUCTION LOOP AMPLIFIERS**

❶ AC power cord

❷ Speakon® socket for connecting the loop cables

❸ Unbalanced audio signals Input for connecting external devices

❹ Balanced audio signal input (LINE level 0 dB) to 1/4 „jack

❺ INFO LOOP OK, fault message output

❻ DC output (phantom power)

❼ MIC / LINE mode Switch for microphone or LINE level Switch for switching phantom power

❽ MIC1 and MIC 2 / LINE inputs on XLR, balanced
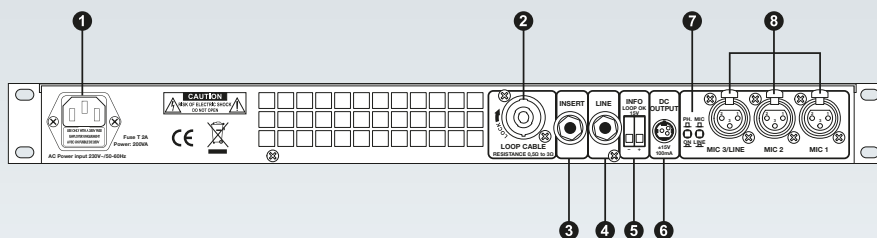
Technical data	ISV-300 A
Compressor/Limiter	Automatic (0 dB to 18 dB)
Frequency range (amplifier/loop)	20 Hz - 20.000 Hz; 80 Hz - 7.500 kHz (-1.5dB)
Distortion factor	Better than 0.25 %
Loop impedance	0.5 - 3.0 Ω
Cover area	approx. 450 m² (depending on the loops)
RMS current (at 1 kHz)	4.5 A
Audio Inputs/Outputs	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	230 V 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 m²
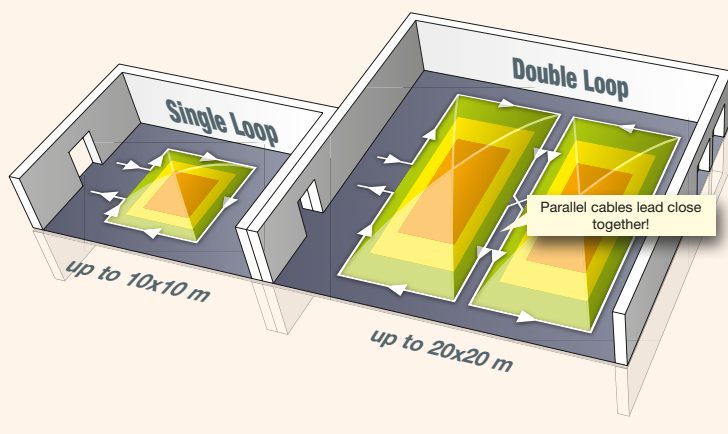
Single Loop

up to 10x10 m

Double Loop

Parallel cables lead close together!

up to 20x20 m

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 450 m²

Description

The ISV-300 A 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-300 A 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 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:

- Depending on the loop design, the coverage area is up to 450 m².
- 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, over-heating, 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

RCS

up to 1.000 m² INDUCTION LOOP AMPLIFIERS
WITH AUTOMATIC ADJUSTMENT

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
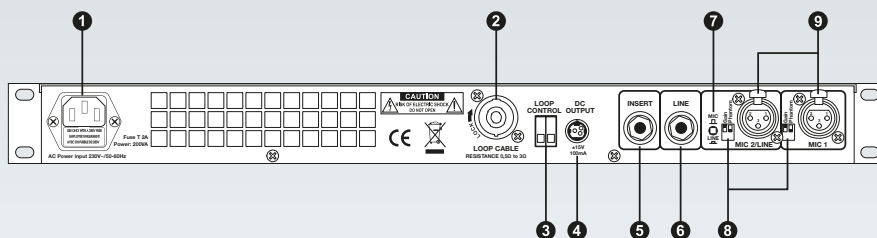
Technical data	ISV-500 A
Compressor/Limiter	Automatic (3 dB to 33 dB)
Frequency range (amplifier/loop)	20Hz - 20.000 Hz; 80 Hz - 6.500 kHz (-1.5dB)
Distortion factor	Better than 0.25 %
Loop impedance	0.5 - 4.0 Ω
Cover area	approx. 1000 m² (depending on the loops)
RMS current (at 1 kHz)	9.4 A
Audio Inputs/Outputs	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	230 V 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   300m² to 1.000m²
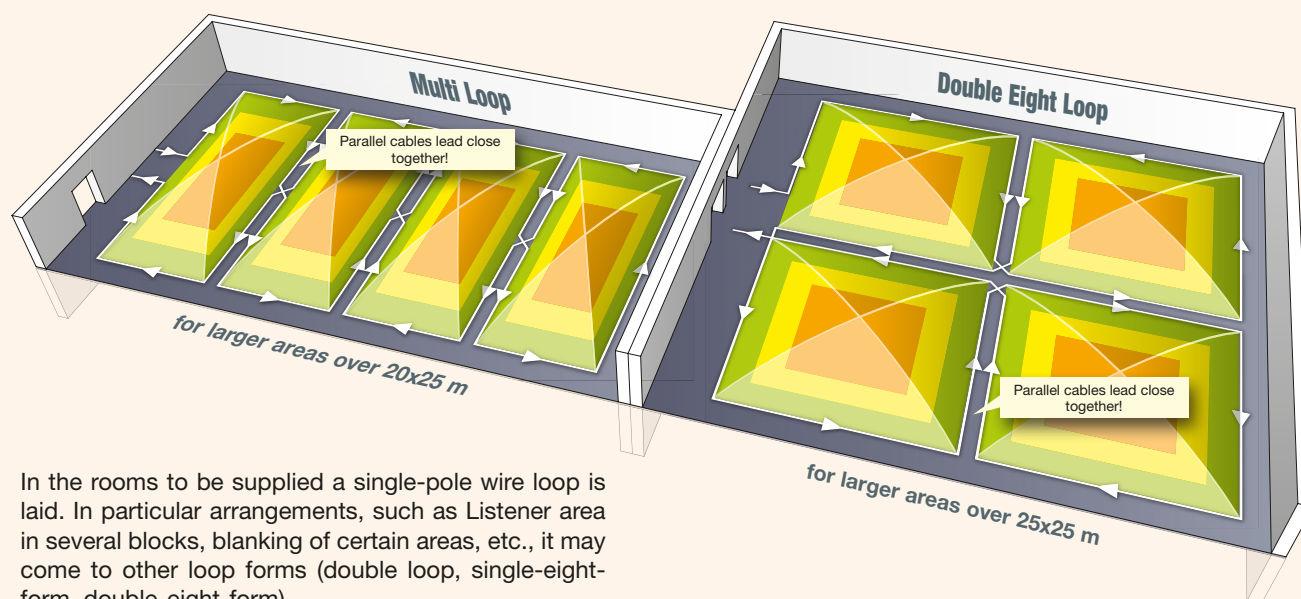
Multi Loop

Parallel cables lead close together!

for larger areas over 20x25 m

Double Eight Loop

Parallel cables lead close together!

for larger areas over 25x25 m

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 m²

WITH AUTOMATIC ADJUSTMENT

DIN
EN 60118-4
IEC 118-4

up to 1.000 m²

MADE IN EUROPE

INDUCTION LOOP AMPLIFIER **ISV-500 A**

Description

The ISV-500 A 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 m².
- 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.

ISV-001 T
Audio Induction Loop Receiver

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

PHASE SHIFTER
FOR DOUBLE LOOP SYSTEM

MADE IN EUROPE

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).

★

EXAMPLE | 90° Phase-Shifting
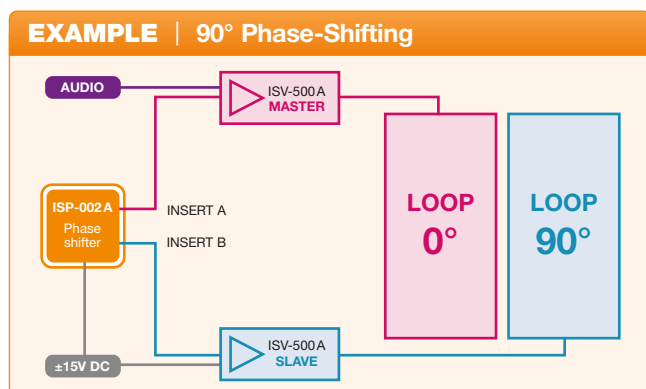
Model designation

Phase shifter, for double-loop system . . . .**ISP-002 A**

PA accessories

RCS
DIAGNOSTICS AND REMOTE ASSISTANCE
REMOTE CONFIGURATION AND DATA EXCHANGE OF RCS SYSTEMS

POSSIBILITIES

WHAT CAN BE CONFIGURED AND CONTROLLED VIA REMOTE ACCESS?

+ **Change of chime times**

+ **Calibration of speakerlines**

+ **Button programming of the microphone stations**

+ **Change or assign alarmtexts or other messages**

+ **Read out status / error messages from the system controller and emergency power management (maintenance work)**

+ **Define zones for background music**

+ **Activate or deactivate line monitoring**

+ **and much more**

SAMPLE CALCULATION*

SAVINGS

ON-SITE SERVICE		VS	REMOTE ACCSESS	
Arrival/Departure (6 hours)	450,00 €		**Arrival/Departure** (not applicable)	0,00 €
Kilometers flat rate (560km)	308,00 €		**Kilometers flat rate** (not applicable)	0,00 €
Working time (1 hour) Hourly billing mode: 85,00 €	85,00 €		**Working time** (4x 15min*) Billing mode every 15 minutes 34,00 €	136,00 €
Total service costs:	**843,00 €**		**Total service costs:**	**136,00 €**

*This calculation example compares the upcoming costs of a on-site service with the costs for a service via remote access to an RCS system. A service assignment with a journey of approx. 280 km (one way) was set as an example here.

DIAGNOSTICS AND REMOTE ASSISTANCE

REMOTE CONFIGURATION AND DATA EXCHANGE OF RCS SYSTEMS

RCS

NEW

+ **Robust industrial PC**

+ **Emergency power supplied by the PA system**

+ **optionally with WLAN and LTE module**

Description

With the service and diagnosis PC SPC-200 A, the status of the PA system can be read out quickly, easily and without long journeys by remote access and changes can be made to the configuration.

A wired network connection (10/100/1000 MBit) with internet access is required for communication. If this is not possible, the system can be optionally expanded with a WLAN or LTE module.

Compared to the conventional assignments of our service employees, problems or settings on the PA system can be solved quickly and cost-effectively (see sample calculation) by RCS or other authorized specialists.

Please consider the following features:

_____

● Protected remote access to the PA system from external.

● Possibility for quick remote diagnosis in the event of a fault or change in the system configuration..

● In combination with a new RCS installation system, it is already factory-wired and preconfigured.

★

What hardware is required on site?

● Ideally an network connection (10/100/1000 Mbit) with internet access

● **Option 1:** WLAN access in connection with the additional module WLAN option SPW-100 A

● **Option 2:** Via mobile data connection (LTE) with the additional module SPL-100 A. Please check network coverage in advance. The installer / operator provides the SIM card with the data volume

Note: The **SPC-200 A** is only available for RCS systems. Our sales and planning team is at your side for further information and detailed questions.

Technical data	SPC-200 A
Operating system / CPU	Windows 10 / 64 Bit; Intel Atom® E38xx processor
Memory / Storage	4 GB RAM / 64 GB SSD
Interfaces	2x Ethernet (10/100/1000 Mbit/s), 2x miniPCIe, 2x COM (RS-232/422/485), 2x SIM card holder, 1x USB 3.0, 3x USB 2.0, VGA, DVI, mSATA, Mic-in, Line-Out
Optional modules	WLAN- or LTE-Module
Power supply	9-48 V DC (max. 60 W)
Emergency power supply	via PA system
Mounting type	DIN rail; 35 mm
Dimensions (WxHxD) / Weight	150mm x 37mm x 105mm; 690 g

Model designation

Service and Diagnostic PC . . . . **SPC-200 A**
Industrial PC for remote configuration and Data exchange of RCS systems

_____ optional accessories: _____

LTE option, Module for Service- and Diagnostic PC . . . . **SPL-100 A**
WLAN option, Module for Service- and Diagnostic PC . . . . . . **SPW-100 A**

RCS

7-CHANNEL OPERATOR CONTROL PANEL

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

Protected
(with Plexiglas Cover PGA-400)

Ideal for the use at:
Media- & meeting rooms ■
Schools ■
Gym & Training rooms ■

7-CHANNEL OPERATOR CONTROL PANEL

RCS

UB-100 A optional

MADE IN GERMANY

optional with:

bt wireless connection
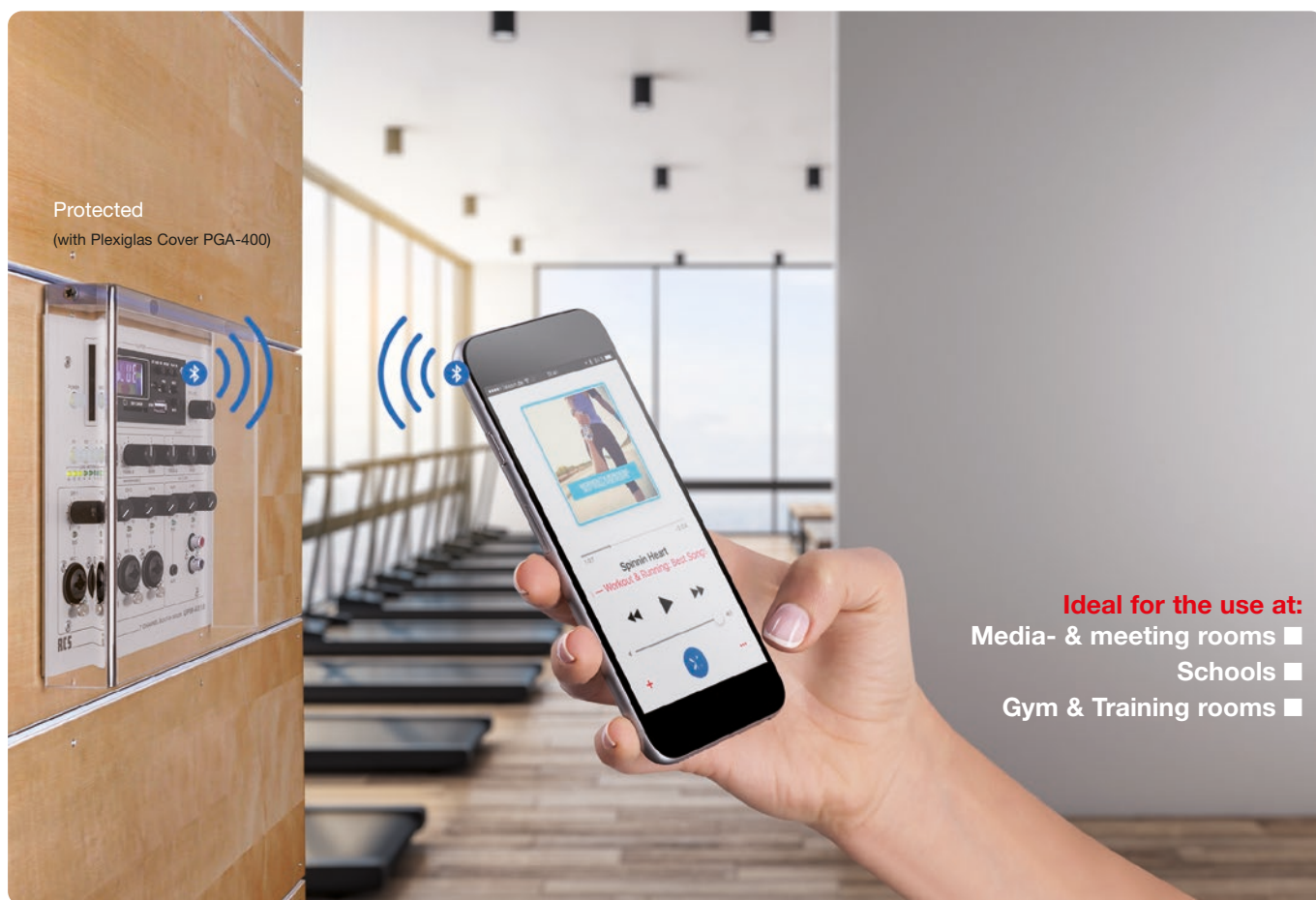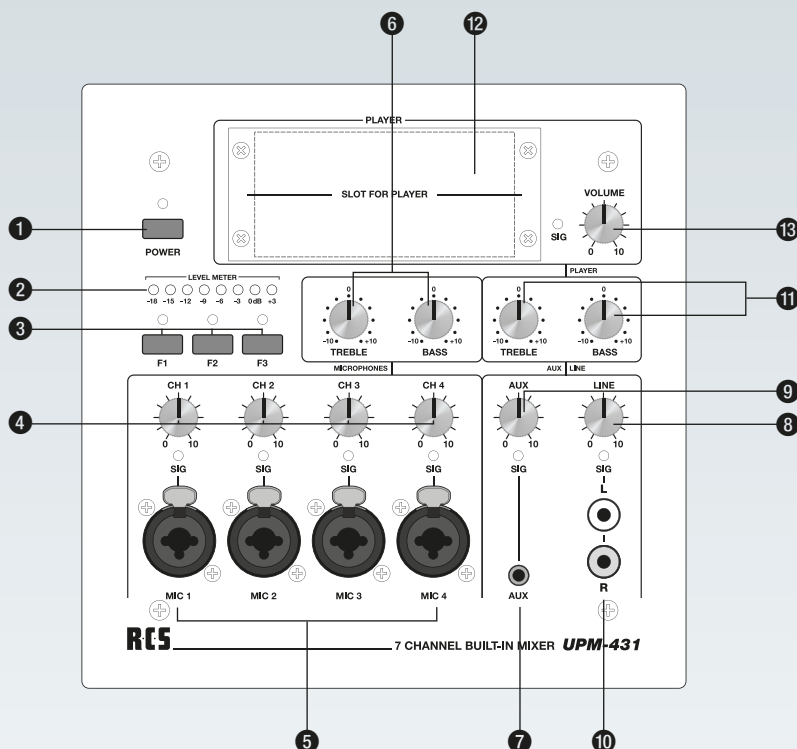
Description

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-431 B 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.

Optional accessories

The BT player module has a USB port and an SD card compartment. For audio transmission via BT from smartphone. 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): 200 x 182 x 35 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

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

- Audio on and off delay

★

Technical data	UPM-431 B
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 B**

RCS

Front view

❶ LINE 1 input on RCA, e.g. for stereo sound recording device

❷ Ready for operation display

❸ XLR microphone input on XLR jack

❹ LINE 2 input on jack 3.5 mm, e.g. for iPod® / AUX or similar

❺ input level control for LINE 2 with signal display LED

❻ input level control for LINE 1 with signal display LED

❼ input level control for the microphone input with signal display LED

❽ Optional function key module with NO contact (only available for UPM-300 H)

LINE 1
L
R
MICRO
LINE 2
ON
SIG SIG SIG
0 10   0 10   0 10
LINE 2 LINE 1 MICRO
RCS
UPM-300 H

Ideal for the use at:
Schools ■
Sports hall's ■
Media- & meeting rooms ■

3-CHANNEL FLUSH MOUNTING MIXER

RCS

UPM-300 V

2 buttons optional (UPM-300 H only)

UPM-300 H
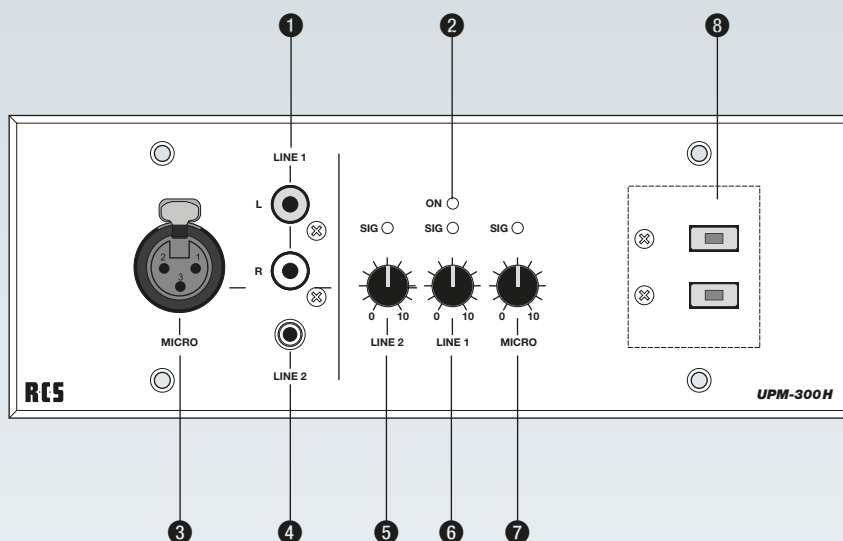
Description

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 (18V DC), 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-002 B). 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 (also suitable for cavity assembly).

APG-300   UPG-300   PGA-300
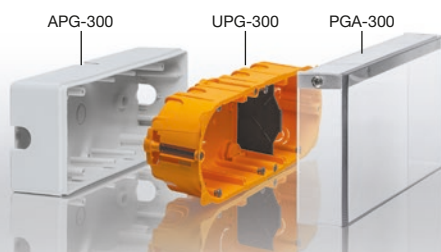
Flush-Mount and Cavity Housing, 3-fold **UPG-300**
Dimensions (WxHxD): 215 x 74 x 44 mm

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 UMP-300 H/V) . . . . **UPM-002 S**

4-CHANNEL OPERATOR CONTROL PANEL

MIXED PREAMPLIFIER FOR VLZ SERIES

WALL REMOTE CONTROLLER VPM-6000U

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

★

ZUR FERNSTEUERUNG DER AUSGANGSLINIEN DES VLZ-VERSTÄRKERS

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

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

LF REMOTE VOLUME CONTROL

RCS

MADE IN GERMANY

Description

The RVC-201A remote volume control is a 2-channel, volt-age-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-001A or the RVC-002A.

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-001A or RVC-002A are required for uset.

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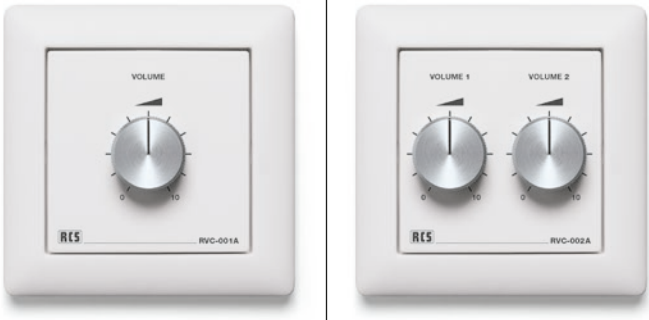
The controllers RVC-001A and RVC-002A are supplied in the switch program.

Technical data	RVC-201A
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, symmtrical
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-201A**
2-Channel, voltage regulated

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

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

RCS

GSM AMOK-ALARMING SYSTEM

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 is 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**

TELEPHONE INTERFACE

RCS

DESIGN + QC
IN GERMANY

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 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.

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

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:

- **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 with the small central units of the „VARIO-LINE" series.

★

Technical data	TIF-404 C
Power supply	24 V
Current consumption	70mA
Contact type	4x Changing switch
Contact rating	1A/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

Model designations

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

RCS

(FOR DIN RAIL) **DIGITAL AMPLIFIER MODULE**

⦿⦿ **STEREO**

MADE IN GERMANY

Description

The DVM-210 A 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).
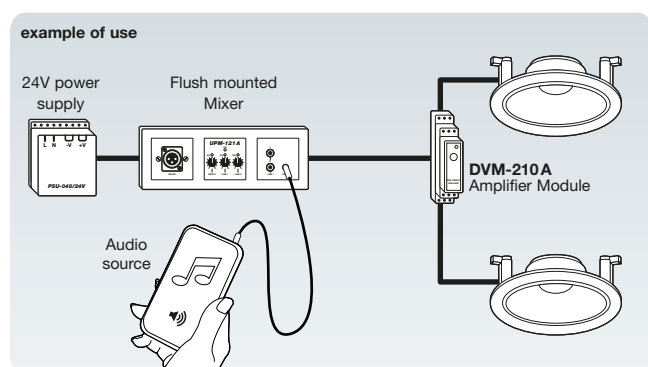
● Low heat generation by digital circuitry.

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

★

example of use

Technical data	DVM-210 A
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	24 V DC
Current consumption at 24V/max.	45mA/2A
Connections	screw terminals up to 2,5 mm²
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-210 A**
2x 20W, suitable for DIN rail mounting, 1 HP

MANUAL CALL POINT

RCS

MADE IN GERMANY

Description

The **manual call points** HMA-001 G/Y/O (green, yellow, 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-100 A, DMM-618 A 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 × 125 × 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**

RCS

+ Different slave clock variations available on request

Custom-made products by combining the variants shown are possible on request.

Please contact our Sales team on the phone number:

+49 8061-3501-0

+ Special designs and sizes available on request

+ All clocks are also available with ball impact protection (safety glass + 3-point attachment)

+ Available housing materials: ABS plastic, aluminum or stainless steel

+ Version available for indoor or outdoor use

clock face variants:
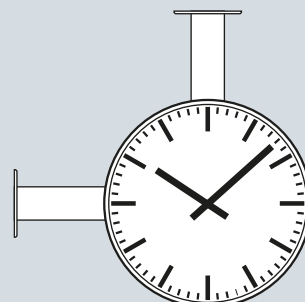
Schmalstrich

DIN-Strich

römisch light

römisch fett

Zahlenblatt v1

Zahlenblatt v2

Zahlenblatt v3

arabischer Stil

round
wall mounting (one sided)

round
wall or ceiling mounting (double sided)

square
wall mounting (one sided)

square
wall or ceiling mounting (double sided)

ANALOGUE SLAVE CLOCKS

RCS

NEW
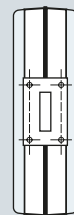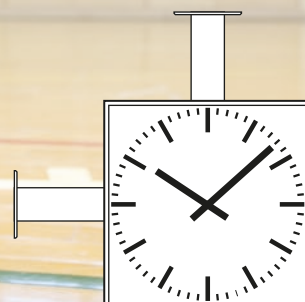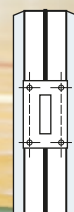
NUR-302DW/DD
NUR-402DW/DD
(incl. wall bracket)

NUR-302

NUR-402

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 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 composed 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.

★

NUR-XXX **DD**

NUR-XXX **DW**
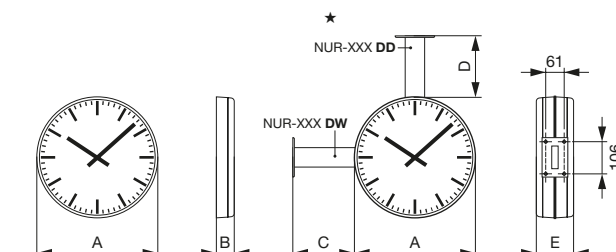
Modells	A	B	C	D	E
NUR-302 / NUR-302 XX	Ø 300/304 mm	45 mm	100 mm	200 mm	93 mm
NUR-402 / NUR-402 XX	Ø 400/406 mm	58 mm	100 mm	200 mm	119 mm

Technical data	NUR-302	NUR-302 DD / DW	NUR-402	NUR-402 DD / DW
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, Dial Arabic numerals, 24V	**NUR-302**
Slave Clock, Ø 300 mm, double-sided, analogue, Dial Arabic numerals, 24V, incl. ceiling bracket	**NUR-302 DD**
Slave Clock, Ø 300 mm, double-sided, analogue, Dial Arabic numerals, 24V, incl. wall bracket	**NUR-302 DW**
Slave Clock, Ø 400 mm, one-sided, analogue, Dial Arabic numerals, 24V	**NUR-402**
Slave Clock, Ø 400 mm, double-sided, analogue, Dial Arabic numerals, 24V, incl. ceiling bracket	**NUR-402 DD**
Slave Clock, Ø 400 mm, double-sided, analogue, Dial Arabic numerals, 24V, incl. wall bracket	**NUR-402 DW**

RCS

NEW

Description

The xenon beacons are signal generators for optical alarms. The BL series is characterized by a very high flash energy and a robust design, which enables use even under rough environmental conditions.

This optical signaling device was developed for a variety of applications and blends harmoniously into the respective architecture. The power consumption of the beacons depends on the operating voltage.

The standard base is included with the beacons. Cable entry is from behind or from the side.

To increase the degree of protection to IP65, the BLS-100 base is optionally available in white or red. These deep base versions also allow lateral cable entry via cable glands.

For applications with a mains voltage of 230V AC, a base with an integrated voltage converter is available as an option.

Please note: The signaling area of the beacons depends on the ambient lighting and mounting height.

Please consider the following features:

● Large voltage range 9 - 60 V DC
● Starting current limitation
● Automatic synchronization
● High efficiency
● Constant power across the entire voltage range
● Screwable base
● IP65 base in white or red and the matching protective cage are available separately and on request.

★

Technical data	BL-024 SERIES
Voltage range	9-60V DC
Power consumption	88 mA @ 24V
Luminous intensity	10 Cd
Flash rate	1 Hz ± 20%
Flash colors	red, orange, clear, blue, green
Material / base color	Base ABS, Lens PC; white or red
Protection class	IP54 (IP 65 with basel BLS-100 W/R only)
Approvals	VdS (G207018)
Dimensions Ø x H / Weight	Ø93x65 mm; 150 g (with BLS-100: Ø93x95; 180 g)

65 Standard (IP54)   Ø 93   Ø 93   95 Deep Base (IP65)

Standard Version   Version with **BLS-100W/R**
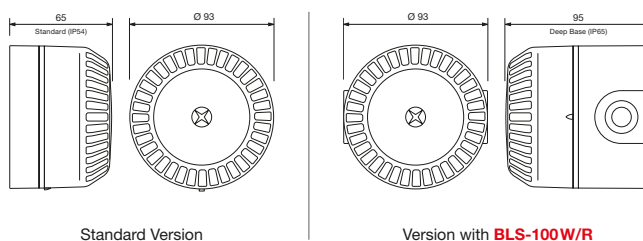
Model designation

Xenon Beacon, blue, 9-60 V DC . . . . **BL-024 B**
Xenon Beacon, green, 9-60 V DC . . . . **BL-024 G**
Xenon Beacon, clear, 9-60 V DC . . . . **BL-024 K**
Xenon Beacon, orange, 9-60 V DC . . . . **BL-024 O**

Xenon Beacon, red, 9-60 V DC . . . . **BL-024 R**
Protective Cage, for Beacon of the BL series **BLK-100**
Base, red, for Beacon of the BL series (IP65) . . . . **BLS-100 R**
Base, white, for Beacon of the BL series (IP65) . . . . **BLS-100 W**

RCS

20-ZONES „VARIO-LINE" PA CENTER

Front view

❶ Controller for MIC / LINE-Inputs 1 – 3

❷ Controller for LINE-Inputs 4 + 5

❸ Bass/Treble control for embedded moduls

❹ Chime switch and volume control for chime

❺ Volume controls for PAGING input

❻ Siren trigger buttons (up and down or continuous tone); Volume control for siren

❼ Sum controller „Master"

❽ On / off switch

❾ LED display for output signal

❿ 20 zones selection, all-call switch and control unit

⓫ Slot for optional sound source modules

Rear view

❶ Switch for MIC priority

❷ Connection for all-call microphone station (VLM-200 A) to RJ45

❸ MIC / LINE Inputs 1 – 3

❹ LINE Inputs 4 + 5

❺ REC Output, unbal. 0dB

❻ AMP-IN and PRE-OUT, Jack 6.3mm, unbal. 0dB

❼ Speaker outputs 20 zones; 100V

❽ 100 V output and 4 ohm output, unswitched

❾ PAGING-IN (priority entry)

❿ Switching input for text announcing of DMT-10 and „all-call"

⓫ Connection for DC power supply DC 24V and Power Remote

⓬ AC power connection cable

⓭ Slot for antenna connection or switching inputs for the text module

⓮ Connection for Microphone Station (VLM-220 A) to RJ45

VLM-200 A | 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-200 A
for VLA-602 A

Technical data	VLA-602 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	100 V, 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

PA CENTER „VARIO-LINE" 20-ZONES

RCS

VLM-220 A

+ 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 08)

- 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-10 USB
RDS / USB

DAB Internet Radio
DAB/DAB+, FM-RDS, USB
TP-200 IR
DAB / USB

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

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

Digital text module
with timer functions, microSD-Card
DMT-10
MP3 / SD-CARD

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

For a detailed description of the modules see pages 126 and 127.

Model designations

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

Microphone Station, for all-call . . . . **VLM-200 A**
Microphone Station, digital for 20 Zones . . . . **VLM-220 A**

RCS

10-ZONES „VARIO-LINE" PA CENTER

Front view

❶ Controller for MIC / LINE-Inputs 1 – 3

❷ Controller for LINE-Inputs 4 + 5

❸ Bass/Treble control for embedded moduls

❹ Chime switch and volume control for chime

❺ Volume controls for PAGING input

❻ Siren trigger buttons (up and down or continuous tone); Volume control for siren

❼ Sum controller „Master"

❽ On / off switch

❾ LED display for output signal

❿ 10 zones selection, all-call switch and control unit

⓫ Slot for optional sound source modules

Rear view

❶ Switch for MIC priority

❷ Connection for all-call microphone station (VLM-200A) to RJ45

❸ MIC / LINE Inputs 1 – 3

❹ LINE Inputs 4 + 5

❺ REC Output, unbal. 0dB

❻ AMP-IN and PRE-OUT, Jack 6.3mm, unbal. 0dB

❼ Speaker outputs 10 zones; switchable for 100V, 70V, 50V, 25V, 12.5V

❽ 100 V output and 4 ohm output, unswitched

❾ PAGING-IN (priority entry)

❿ Switching input for text announcing of DMT-10 and all-call

⓫ Connection for DC power supply DC 24V and Power Remote

⓬ AC power connection cable

⓭ Slot for antenna connection or switching inputs for the text module

⓮ Connection for Microphone Station (VLM-210A) to RJ45

⓯ Volume controls REMOTE for announcement of VLM-210A
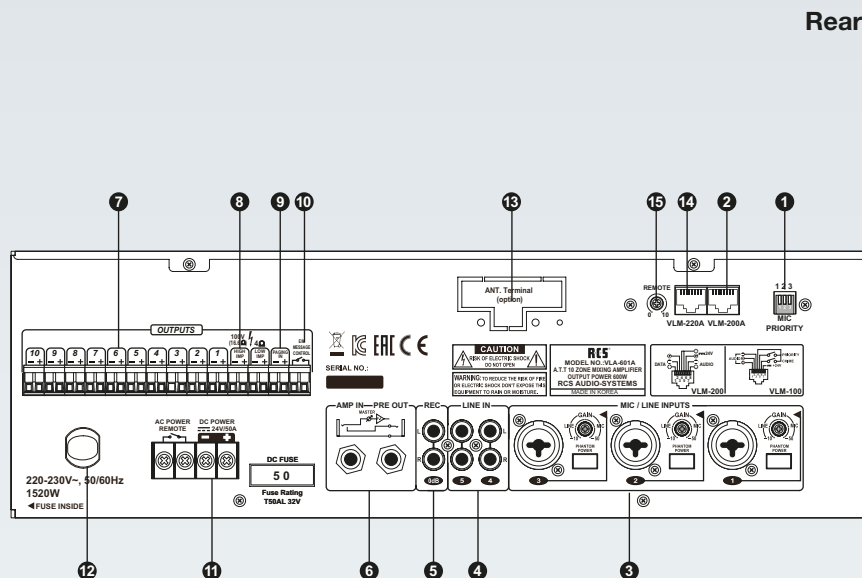
VLM-200A | for all-call

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-601A
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	100 V, 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

PA CENTER „VARIO-LINE" 10-ZONES

VLM-210 A

+ **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-200 A („all-call") and VLM-210 A (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-210 A 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 08)

- 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-10 USB
RDS / USB

DAB Internet Radio
DAB/DAB+, FM-RDS, USB
TP-200 IR
DAB / USB

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

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

Digital text module
with timer functions, microSD-Card
DMT-10
MP3 / SD-CARD

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

For a detailed description of the modules see pages 126 and 127.

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**

6-ZONES „VARIO-LINE" PA CENTER

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
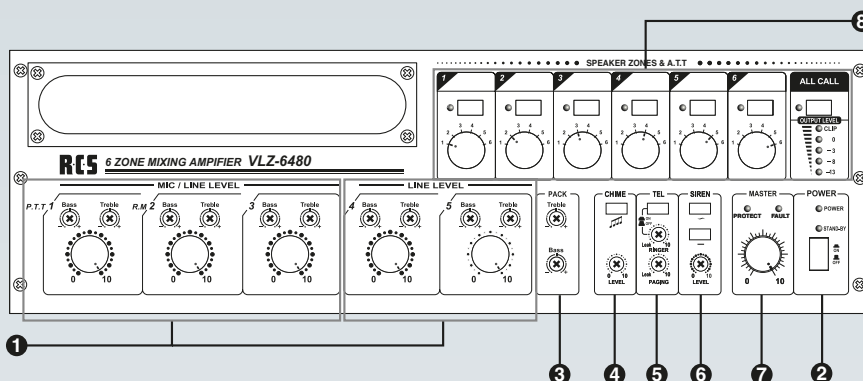
Rear view

1. MIC priority switch
2. MIC-1 with chime release for VLM-100 A (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. 100 V 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 connector IEC plug (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 24 V output for obligatory call (for VLM-100 A, VLM-200 A)
19. Connection for VLM-200 A (RJ-45)
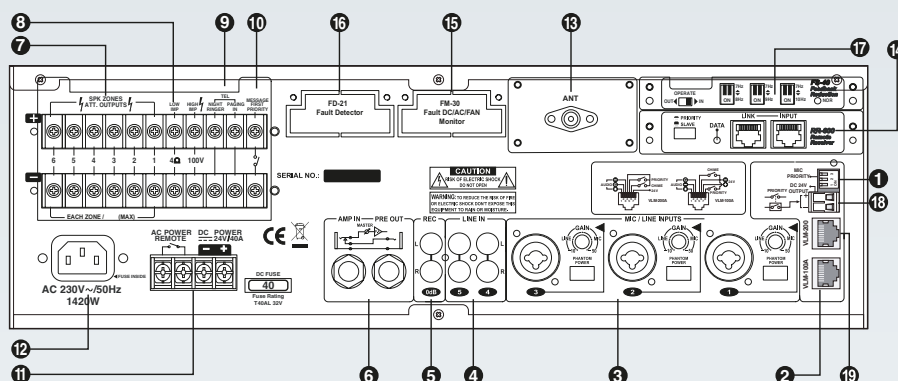
Technical data	VLZ-6240A	VLZ-6480A	VLZ-6600A
Output power	360/240 W (Program/RMS)	720/480 W RMS (Program/RMS)	900/600 W RMS (Program/RMS)
Frequency resp., noise level	55 Hz – 20.000 Hz (better than -3 dB), MIC better than 70 dB, LINE better than 80 dB		
THD at 1 kHz	better than 1 % at 1kHz		
Inputs MIC – 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	100 V, 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; 14 kg	483x133x356 mm; 20 kg	483x133x356 mm; 22 kg

PA CENTER „VARIO-LINE" 6-ZONES

RCS

VLM -206

+ 6 SPEAKER LINES
+ MONITORING OF THE BASIC FUNCTIONS
+ UP TO 600W (RMS) POWER

Supplied with
19˝ mounting brackets.

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-100 A, 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).

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 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-100 A. 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 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.

- The amplifier operates on mains power (230 V) or 24 V DC (emergency power supply).

- 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-10 USB _____ *RDS USB*

DAB Internet Radio
DAB/DAB+, FM-RDS, USB
TP-200 IR _____ *DAB USB*

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

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

Digital text module
with timer functions, microSD-Card
DMT-10 _____ *MP3 SD-CARD*

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

For a detailed description of the modules see pages 126 and 127.

Model designations

VLM-100 A | for all-call

Microphone desk (condenser) with pre-announcement chime, priority switching via RJ-45 connection.

Microphone desk .... **VLM-100 A**

VLM-106 | for 6 zones

Digital microphone desk to select and control 6 speaker zones. Pre-announcement chime and all-call.

VLM-106   VLE-004

Microphone desk **VLM-106**
Microphone desk .... **VLM-106 WO**
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 seperately speaker zones, further for remote control of the digital text module DMT-10.

Microphone desk **VLM-206**
Microphone desk .... **VLM-206 WO**
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.
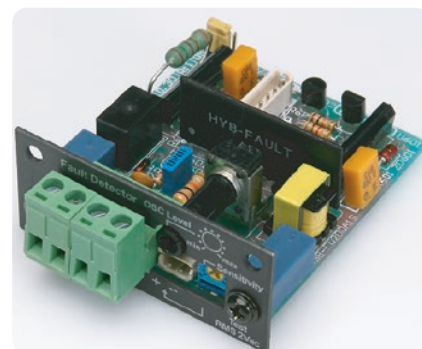
Pilot Tone Module... **FD-21**
Extension-Module for the VLZ-series

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.
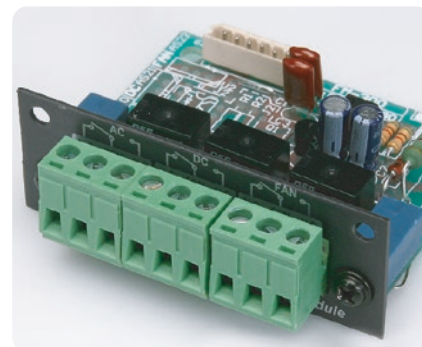
Error Monitoring Module..**FM-30**
Extension-Module for the VLZ-series

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.
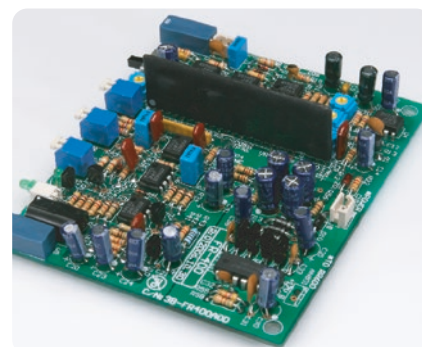
Frequency Shift Module..**FS-40**
Extension-Module for the VLZ-series

SPECIAL FUNCTIONS „VARIO-LINE" 6-ZONES
OPTIONAL

Example 1: Paging system with 6 Speaker lines, total power 2520 W | VL-SERVICE 01

Up to 5 speaker zones are adapted to LINE level for cascading with further amplifiers:

30x BC-006   6x PB-730   40x RC-110   13x DH-130S   30x RC-110

| BA-240 DP | BA-240 DP | BA-480 DP | BA-480 DP | BA-480 DP |

5x 0-dB adjustment
(internal)

VLZ-6600 A

4x PB-1210 S

VLM-206   VLM-106   VLM-100 A
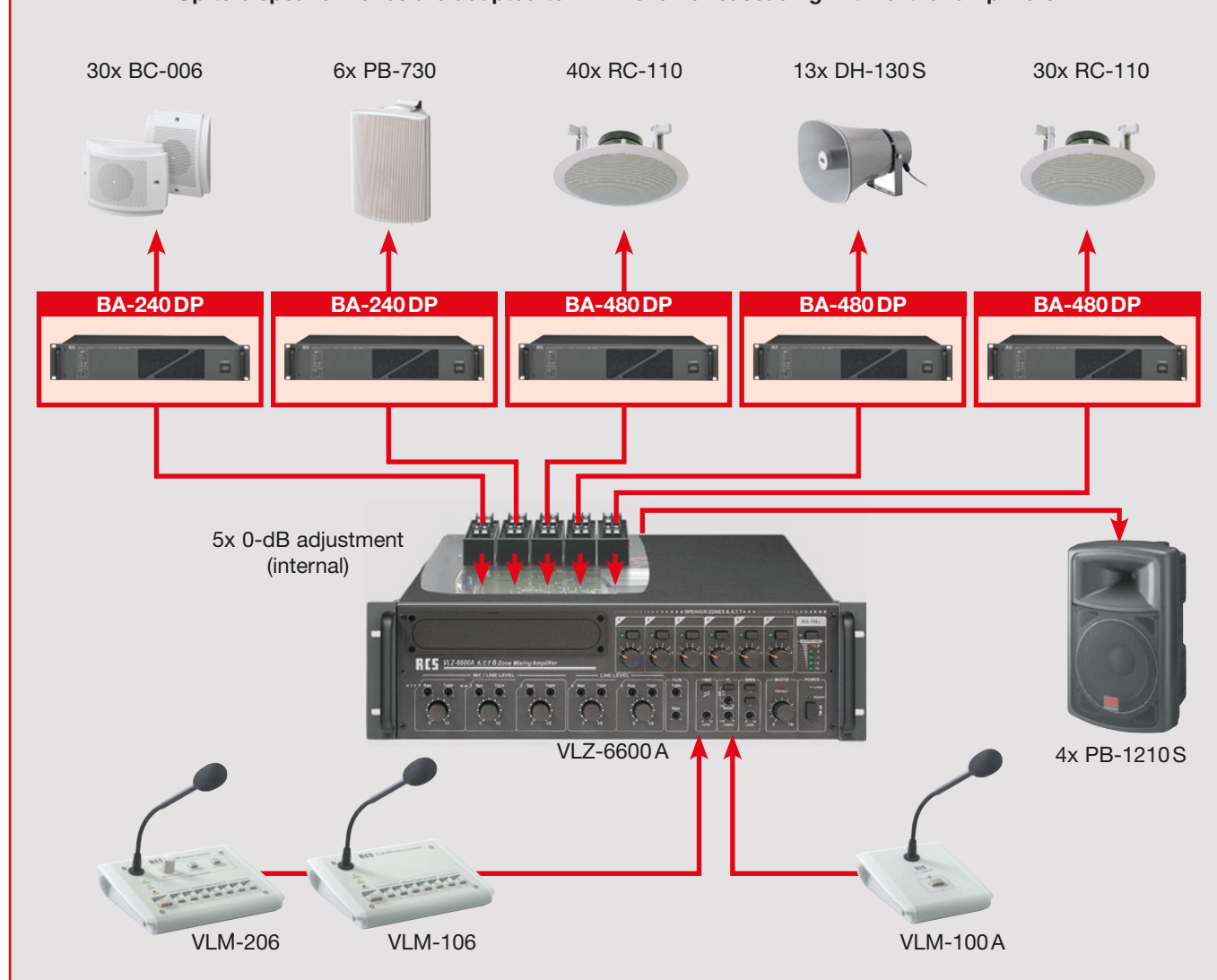
Example 2: Paging system with recess chime and alarm siren | VL-SERVICE 03

Additional input for the external control of chime, siren and All-Call:

| ZONE 1 | ZONE 2 | ZONE 3 | ZONE 4 | ZONE 5 | ZONE 6 |

SIREN   CHIME

Fire detection center   **DCF-Radio clock timer**

VLM-100 A │ for all-call

Microphone desk (condenser) with pre-announcement chime, priority switching via RJ-45 connection.

Microphone desk .... **VLM-100 A**

VLM-106 │ for 5 zones

Digital microphone desk to select and control 5 speaker zones. Pre-announcement chime and all-call.

VLM-105   VLE-004

Microphone desk **VLM-105**
Microphone desk .... **VLM-105 WO**
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 seperately speaker zones, further for remote control of the digital text module DMT-10.

Microphone desk **VLM-205**
Microphone desk .... **VLM-205 WO**
as VLM-205 but without interface RR-10

Front view

❶ Switch for microphone priority, controls the priority of MIC-1, 2 and 3 over the other inputs.

❷ MIC-1 with chime trigger for RCS microphone station VLM-100 A on RJ-45

❸ MIC-LINE input 1 – 3 with gain control on balanced combo sockets (XLR and jack) and phantom power.

❹ LINE input 4 + 5, unbalanced RCA sockets.

❺ REC output, unbalanced 0 dB, on RCA sockets.

❻ AMP-IN and PRE-OUT on 6.3 mm jack, unbalanced.

❼ 100 V and 70 V speaker outputs divided into 5 circuits that can be controlled separately.

❽ Low-impedance output, 4 ohms.

❾ 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.

❿ 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.

⓫ Terminal for 24 V DC power supply (emergency power supply) and for switching on/off of amplifier.

⓬ IEC power inlet (cold condition).

⓭ Antenna connection for the use of TP-10 USB tuner modules or CDR-10 USB (CD/tuner modules).

⓮ Connection panel for the VLM-105 and VLM-205 remote microphone stations with respective priority switches. (only with installed interface RR-10)

⓯ Connection for VLM-200 A on RJ-45

⓰ DC 24 V-Output for obligatory call relay (for VLM-100 A, VLM-200 A)

Technical data	VLA-120 C – VLA-240 C
Output power	VLA-120: 120 W RMS (max. 180 W) – VLA-240 C: 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	100 V 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-120 C: 350 W – VLA-240 C: 630 W VLA-120 C: 1/8-0,8 A – rated-1.8 A – VLA-240 C: 1/8-1.6 A – rated-3,2A
Dimensions W x H x D / Weight	483 x 133 x 352 mm; VLA-120 C: approx. 13,0 kg, VLA-240 C: approx. 14,5 kg

PA CENTER „VARIO-LINE" 5-ZONES

RCS

Ball-bearing fan ensures long life and quiet running

VLM -100 A

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-10 USB

RDS / USB

DAB Internet Radio
DAB/DAB+, FM-RDS, USB

TP-200 IR

DAB / USB

CD/MP3-Player module
Repeat, Random, etc

CDP-10 USB

MP3 / USB

CD/MP3-Tuner module
RDS-Tuner and MP3-/CD-Player

CDR-10 USB

MP3 / USB

Digital text module
with timer functions, microSD-Card

DMT-10

MP3 / SD-CARD

BT-Player module
USB-Port/SD-Card, Remote

BM-10 U

bt / USB / SD-CARD

For a detailed description of the modules see pages 126 and 127.

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**

RCS   „VARIO-LINE" SPECIAL FUNCTIONS

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-130 S	1x PB-1210 S

BA-240 DP   **BA-240 DP**   **BA-480 DP**   **BA-480 DP**

4x 0-dB adjustment
(internal)

VLA-240 C

VLM-105   VLM-105   VLM-100 A
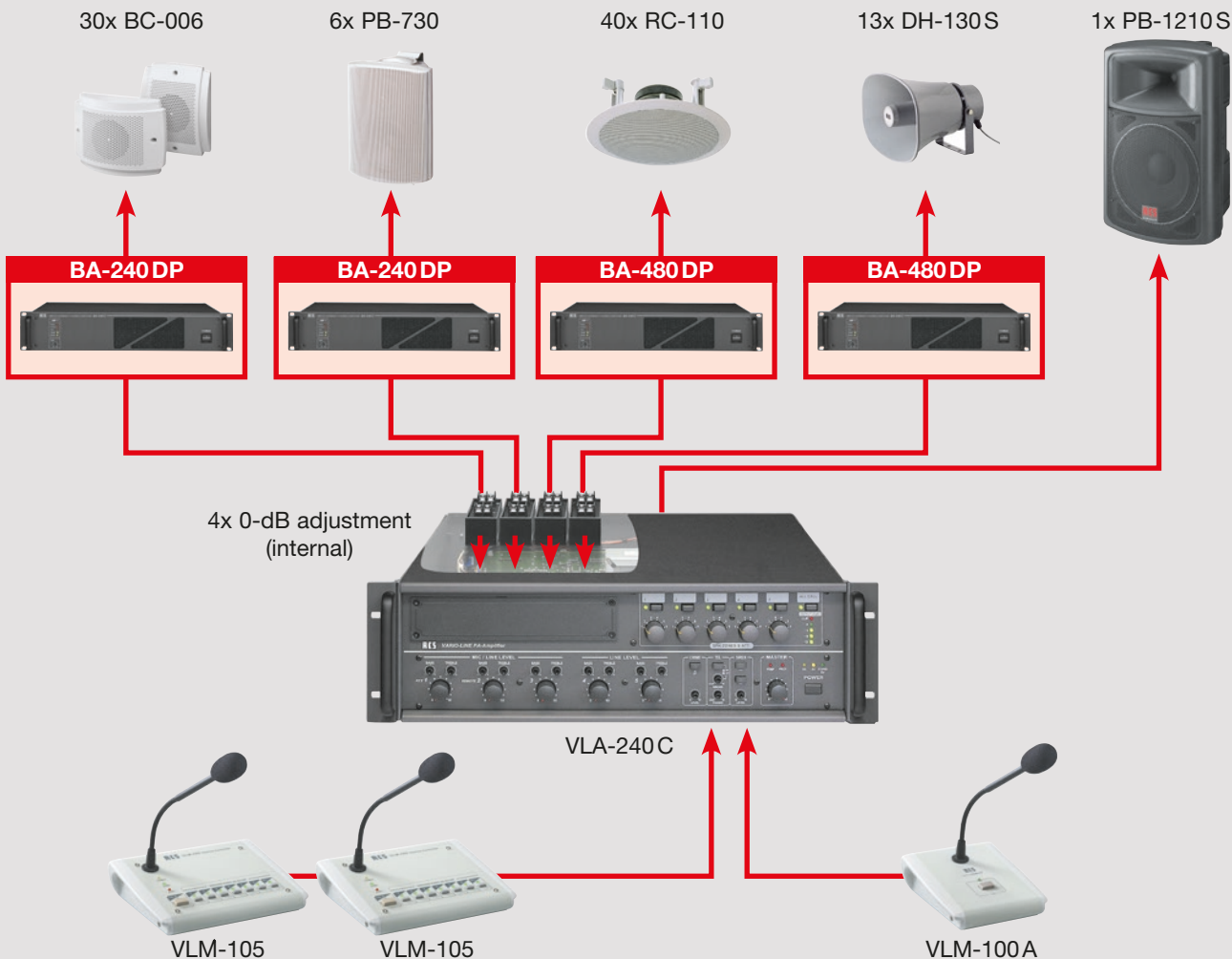
EXAMPLE 2: Medical practice with chime and siren | VL-SERVICE 03

Additional input for the external control of chime, siren and All-Call:

Waiting Room	Doctors Room	Corridor 1 & 2	Reception	Treatment Room

SIREN   CHIME

Fire detection center   **DCF-Radio clock timer**

SPECIAL FUNCTIONS „VARIO-LINE"

OPTIONAL

RCS
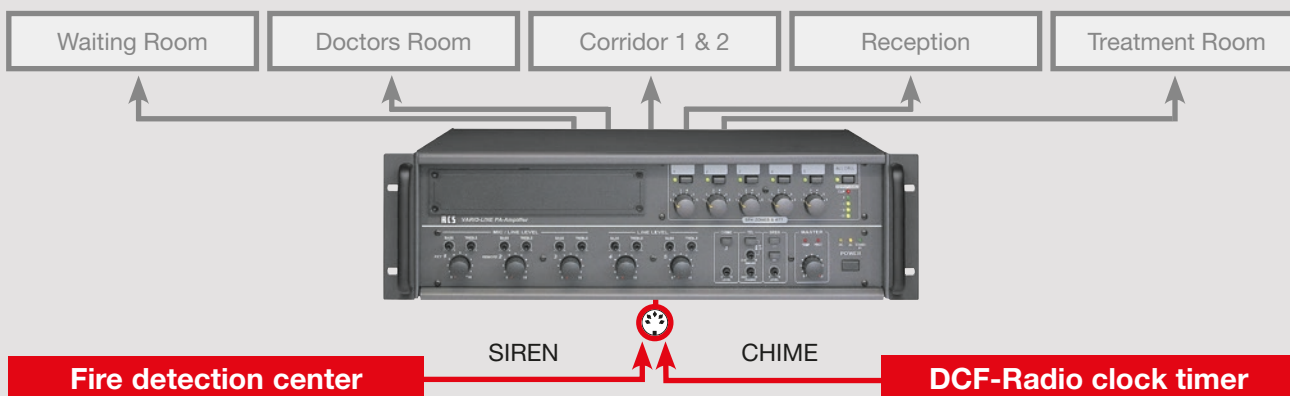
VL-SERVICE 01

0-dB adjustment for power extension

The desired numbers of speaker zones are adapted to LINE level for cascading with further amplifiers.

- **Power extension up to 3000 W**
- **Separate control- and switchable lines remain**
- **0-dB adjustment internal** (please indicate desired number with the order)

0-dB adjustment, for power extension . . **VL-SERVICE 01**

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:

- **For release of chime and siren via potential free contacts, e.g. by BMZ, clock timer, remote microphone etc.**
- **Simultaneous release of All-Call**
- **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:

- **Easy activation of desired speaker lines, e.g. via substation, key pad or clock timer**
- **7-pin DIN-socket as interface**

Potential free contacts ………… **VL-SERVICE 05**

VL-SERVICE 06

Ground leak monitoring

Module installation for ground leak monitoring:

- **Monitoring of the 100V-outputs for ground leak**
- **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:

- **Covered alarm switch**
- **Two LEDs to indicate an error**
- **Three keys for special functions**

Microphone station extension … **VL-SERVICE 07**

VL-SERVICE 08

MP3-/Micro-SD Card module for external start of audio files

Installation and wiring of the digital MP3/Micro-SD card module as well as a 10-pin plug-clamp connector on the rear of the device.

- **LF output wired directly to the preamplifier unit**
- **At gong or siren sequence, all-call are activated via status output**
- **Power supply through mixing amplifier**

MP3-/Micro-SD Card module … **VL-SERVICE 08**

„CPA-5000 Series" PA CENTER

❶ Input for Mic 1 (priority)

❷ Controls for Input 1-2-3-4

❸ Control and switch for AUX 5-6-7

❹ Master volume control and bass/ treble controls

❺ LED for operating status

❻ Power switch

❼ Chime switch to trigger chime

❽ Empty compartment for installation of sound source modules

❾ 5-zone switch and control panel

Rear view

❶ Phantom power switch for input 1-2-3-4

❷ MIC/LINE selector switch for input 2-3-4

❸ Balanced inputs on screw-type connectors (MS-050)

❹ Controls for chime, siren and mute level

❺ Blank panel for antenna of TP-10 USB and CDR-10 USB or remote control of DMT-10 announcement module

❻ AMP-IN and PRE-OUT on 6.3 mm jack, unbalanced

❼ AUX input 5-6-7 on RCA sockets

❽ Input 1 -2 on combo sockets (XLR and jack)

❾ Ground lift switch

❿ 24 V DC connection

⓫ Remote switch-on via „Power Remote"

⓬ IEC power inlet (cold condition)

⓭ 8 ohms and 100 V / 70 V outputs

⓮ 5 Switchable and adjustable speaker outputs (100V or 70 V)

⓯ Remote control for siren

⓰ Remote control for two-tone chime

⓱ Contact for pre-announcement chime input 2-3-4

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

PA CENTER „CPA-5000 Series"

RCS

MS-050 P

Supplied with 19″ mounting brackets.

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 5 100 V 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 100 V 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-050 P 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-10 USB _____

RDS / USB

DAB Internet Radio
DAB/DAB+, FM-RDS, USB

TP-200 IR _____

DAB / USB

CD/MP3-Player module
Repeat, Random, etc

CDP-10 USB _____

MP3 / USB

CD/MP3-Tuner module
RDS-Tuner and MP3-/CD-Player

CDR-10 USB _____

MP3 / USB

Digital text module
with timer functions, microSD-Card

DMT-10 _____

MP3 / SD-CARD

BT-Player module
USB-Port/SD-Card, Remote

BM-10 U _____

bt / USB / SD-CARD

For a detailed description of the modules see pages 126 and 127.

Model designations

Small central unit, 120 W (3 RU)	CPA-5120 C
Small central unit, 240 W (3 RU)	CPA-5240 C
Small central unit, 480 W (3 RU)	CPA-5480 C

Desktop microphone station	MS-050 P

Screw-type connector, balanced, pre-announcement chime, priority

„CPA-3000 SERIES" PA CENTER

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
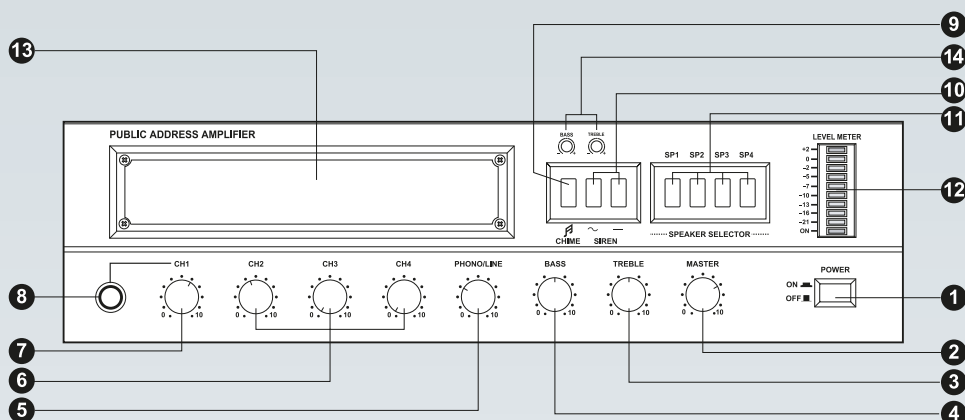
Rear view

1 Power inlet
2 Impedance switch 100 V – 70 V
3 24 V DC power supply
4 Fuse holder (AC and DC))
5 Optional: Antenna input (only with modules TP-10 USB and CDR-10 USB)
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
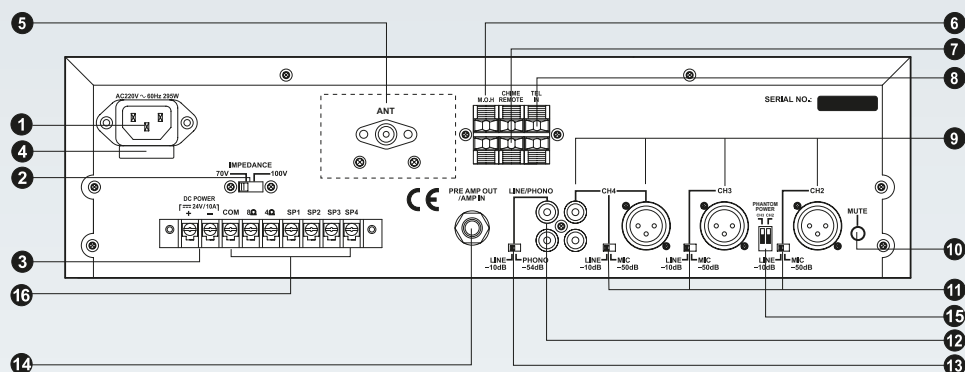
Drawing shows model CPA-3120C

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	100 V – 167 ohms, 70 V – 83 ohms, 4 – 8 ohms	100 V – 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 100 V 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 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.

- 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-10 USB

RDS
USB

DAB Internet Radio
DAB/DAB+, FM-RDS, USB

TP-200 IR

DAB
USB

CD/MP3-Player module
Repeat, Random, etc

CDP-10 USB

MP3
USB

CD/MP3-Tuner module
RDS-Tuner and MP3-/CD-Player

CDR-10 USB

MP3
USB

Digital text module
with timer functions, microSD-Card

DMT-10

MP3
SD-CARD

BT-Player module
USB-Port/SD-Card, Remote

BM-10 U

bt
USB
SD-CARD

For a detailed description of the modules see pages 126 and 127.

Picture shows RMK-10

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

❶ Power switch, power LED lit when switched on

❷ Treble and bass controls; Bass control adjustable from 40 Hz – 400 Hz and treble control adjustable from 2.5 kHz – 20 kHz

❸ Separate volume controls for Mic and Aux inputs

❹ LED level meter for indication of signal level

❺ Empty compartment for the installation of the sound source modules TP-10 USB or DMT-10

❻ Treble and bass controls for sound source module
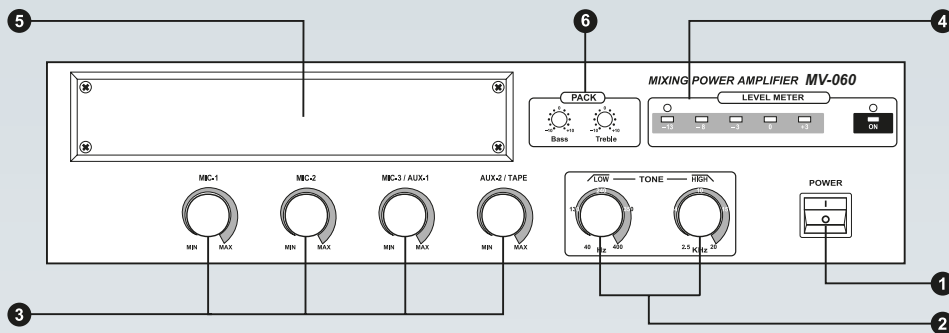
Rear view

❶ Balanced MIC and AUX inputs

❷ Switch for priority activation

❸ MIC-AUX selector switch for input MIC3

❹ RCA sockets for TAPE IN and REC OUT

❺ Terminals for TEL IN and TEL RING

❻ Volume control for „TEL RING" input

❼ Volume control for „TEL IN" input

❽ Speaker terminals

❾ Impedance selector switch 100 V or 70 V

❿ 12 V DC power supply

⓫ IEC power inlet (cold condition)

⓬ AC fuse, DC fuse is inside the amplifier
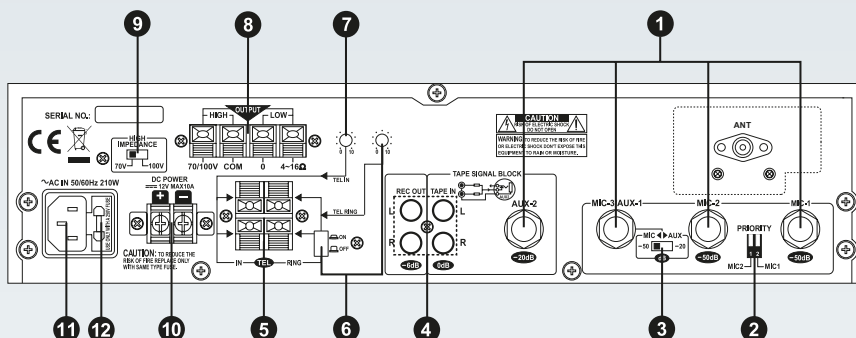
Drawing shows model MV-060

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	100 V – 70 V and 4 ~ 16 ohms low-impedance outputs	100 V – 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

DESKTOP AMPLIFIERS

**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

**RDS
USB**

TP-10 USB

Digital text module
with timer functions, microSD-Card

**MP3
SD-CARD**

DMT-10

BT-Player module
USB-Port/SD-Card, Remote

bt **USB
SD-CARD**

BM-10 U

For a detailed description of the modules see pages 126 and 127.

Model designations

FOR PA CENTERS **SOUND SOURCE MODULES**

RDS
USB

FM/AM-Tuner module

Technical data	TP-10 USB
Wavebands	FM 87,5 to 108,0 MHz and AM 522 to 1.620 kHz
Antenna inputs	75 ohms unballanced; 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-10 USB**

Description

The TP-10 USB 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.
- uning and programming is performed with the respective buttons.
- USB Interface

DAB
RDS
USB

DAB/DAB+/FM-RDS Internet-Radio Module

Technical data	TP-200 IR
Power supply	17V DC, via PA Center
Display	LCD graphic display, menu guidance and time display
Empfangsbereiche	FM 87,5 to 108,0 MHz and DAB 174,928 to 239,200 MHz
Ausgangsaudiopegel	0 dBm / 600 ohms
Audio formats	MP3, AAC, WMA, WAV, FLAC
Dimensions (WxHxD) / weight	194 x 40 x 113 mm; ca. 0,36 kg

DAB Internet-Radio Module . . . . **TP-200 IR**

Description

The DAB / DAB + Internet radio module is suitable for installation in the corresponding empty field of the small central units or module carriers. It offers access to the digital radio world and podcasts via the Internet.

- The device has an RJ-45 network socket (LAN) and a separate FM antenna connection.
- Graphic display showing the playing time, track numbers, functions, audio levels and player modes.
- Play various audio files from a USB stick or an external USB hard disk.
- Automatic time update and Alarm function.

RDS
MP3
USB

MP3/CD player and FM/AM tuner module

Technical data	CDR-10 USB
Tuner section	Analogous to the TP-10 RDS FM/AM tuner module described on the next page
CD/MP3-player section	Analoguos to the CDP-10 USB 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-10 USB**

Description

The CDR-10 USB 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-10 USB module above.
- The features of the tuner section are the same as the ones of the TP-10 USB module described above.
- USB interface

SOUND SOURCE MODULES FOR PA CENTERS

Description

The digital text module DMT-10 is suitable for installation in the empty compartment of the small central unit or the Modular Pre-Amplifier ME-2A.

- 6 memory texts can be selected via buttons, external contacts or desk mic.
- 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

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**

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.
- USB interface

USB CD/mp3 player module

Technical data	CDP-10USB
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**

R·C·S

(for up to 2 modules) **MODULAR 19″ PRE-AMPLIFIER**

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. 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 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 desktop 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 modular pre-amplifier.

★

FM/AM Tuner module
18x FM + 6x AM memory stations

TP-10 USB

 RDS USB

DAB Internet Radio
DAB/DAB+, FM-RDS, USB

TP-200 IR

 DAB USB

CD/MP3-Player module
Repeat, Random, etc.

CDP-10 USB

 MP3 USB

CD/MP3-Tuner module
RDS-Tuner and MP3-/CD-Player

CDR-10 USB

 MP3 USB

Digital text module
with timer functions, microSD-Card

DMT-10

 MP3 SD-CARD

BT-Player module
USB-Port/SD-Card, Remote

BM-10 U

 bt USB SD-CARD

Technical data	ME-2 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
Dimensions (WxHxD)	483 x 88 x 350, 2 RU
Weight	approx. 5,0 kg

Model designations

Modular pre-amplifier, (2 RU) . . . . **ME-2 A**

19″-MODULAR PRE-AMPLIFIER (for up to 2 modules)

RCS

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-1A 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.

★

RDS Tuner
10 FM/10 AM station memory

AM-100 RDS

DAB-Tuner BT/USB/SD
Player with Remote control

AM-100 DAB

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, Remote control

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**

RCS

HDMI® · DVD VIDEO · COMPACT disc DIGITAL AUDIO · DOLBY DIGITAL · HD 1080p · MP3

Photo may differ!

Description

The DVD-player DVD-200 X 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

❶ 230V AC 50 Hz
❷ HDMI port
❸ Audio OUT Cinch L/R
❹ Digital Audio Out: Coaxial
❺ Video Out: Composite Video
❻ Scart (RGB) output
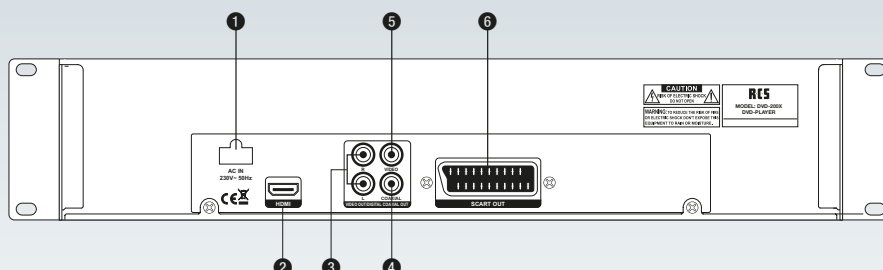
Model designation

19˝ DVD-Player, (2 RU) . . . . **DVD-200 X**

19˝-DAB INTERNET RADIO / MULTI-TUNER

RCS

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
THD at 1kHz	0.3%
Signal-to-noise ratio	65dB
Dimensions (WxHxD)	483 x 44 x 150 mm (1 RU, 19')
Weight	2,8 kg

Rear view

1. RS-232 Interface
2. 2.4 GHz Antenna
3. LAN Interface (RJ-45)
4. Audio output L/R Cinch
5. Antenna input 75 Ohms
6. DC Input 24 V
7. Power Input AC 230 V
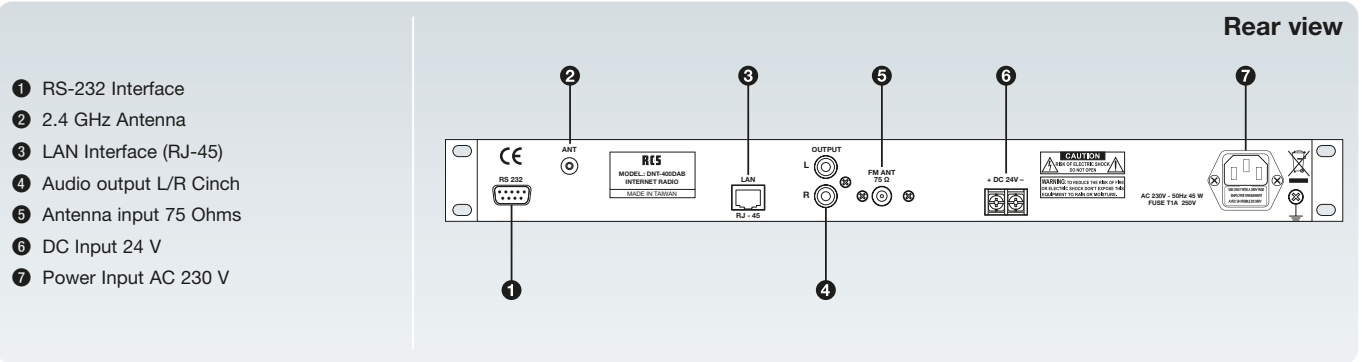
Model designation

19˝-DAB Internet Radio Multi-Tuner, (1 RU) incl. Remote control . . . . **DNT-400 DAB**

Description

These volume control panels have been designed as 19˝ rackmount units. Using 6 100 V-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 100 V-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.
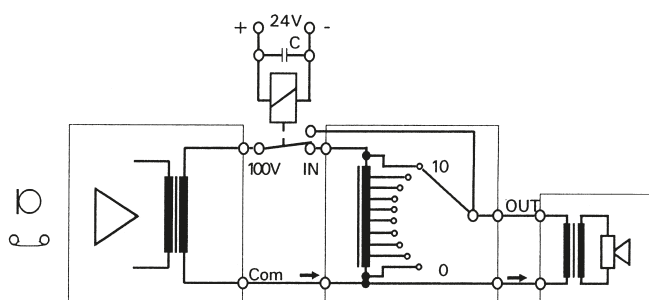
- Screw-type terminal strips facilitate wiring.

- The 100 V 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

Schematic diagram
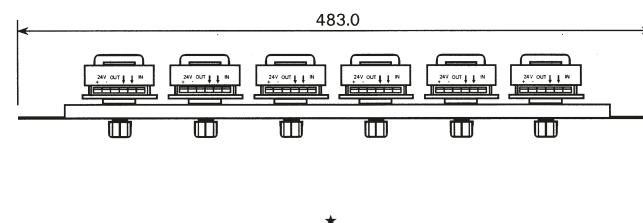
Technical data	LR-6030	LR-6060	LR-6120
Control power (100 V)	6 x 30 W	6 x 60 W	6 x 120 W
Priority override relays	6 St. (24 V)		
Control steps	10 + 0 position		
Control type	100 V-transformer		
Dimensions (WxHxD)	483 x 88 x 68 mm, 2 RU		
Colour	black		
Weight	approx. 1,9 kg	approx. 2,2 kg	approx. 2,5 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**

5-FOLD 100V LINE-OUTPUT-ATTENUATOR

R·C·S

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	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

EMERGENCY SWITCHOVER UNIT

R·C·S

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**

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	8A 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 mm²; 2,5 mm² (without ferrule); 0,25 mm²; 1,5 mm² (with ferrule)
Stripping length connection wires	5,6 mm
Dimensions (wxhxd)	85 x 85 x 50 mm

VOICE EVACUATION CEILING SPEAKER

EN 54-24 CERTIFIED

RCS

6W	Adaptions 1,5 / 3 / 6 W
2x 6W	Adaptions 1,5 / 3 / 6 W
broadband chassis	

MADE IN EUROPE

100 V

PASSIVE

ACTIVE

EN 54-24 certified

Certificat No. 1438-CPR-0413 1438-CPR-0415

Under fire regulation
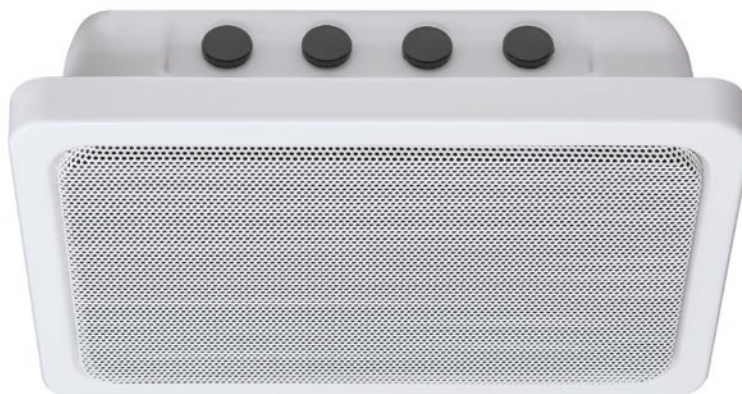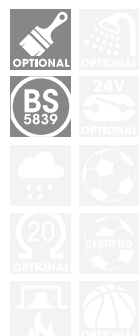
BS 5839

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..

★
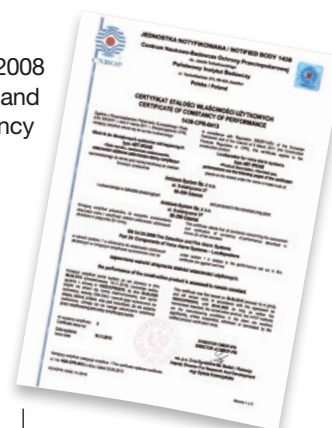
Back view

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.

The square cut for this installation should have a side length of 235 x 155 mm ± 3 mm.

Technical data	ABT-W6	ABT-W6 AB
Load rating (Music Power)	6 (15) W	2x 6 (15) W
Adaptions at 100 V	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 x155 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)
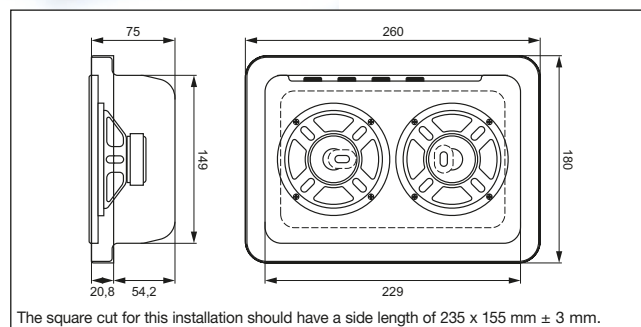
Model designations

Voice Evacuation Ceiling Speaker..............**ABT-W6**
6 W, with 100 V-transformer, white, metal

Voice Evacuation Ceiling Speaker...........**ABT-W6 AB**
2x 6 W, with 100 V-transformer, white, metalg

Installation frame, for flush mounting ....**ABT-W6 FRAME**

VOICE EVACUATION CEILING SPEAKER

EN 54-24 CERTIFIED

100 V

PASSIVE

ACTIVE

6W Adaptions 1,5 / 3 / 6 W

EN 54-24 certified

Certificat 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.
- 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).

★
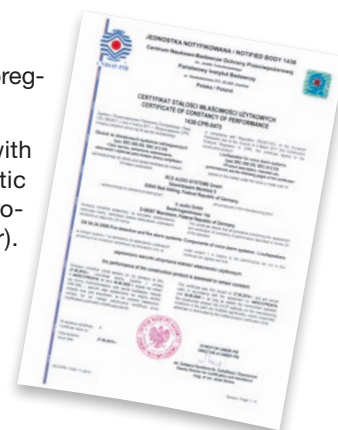
Technical data	SRC-606 EN
Nominal load capacity (music load cap.)	6 (15) W
Adjustments at 100 V	6-3-1,5 W
Frequency range	70 – 23.500 Hz
Sound pressure 1 W/1 m	91,2 dB
Sound pressure Pmax/4 m	95,9 dB
Sensitivity 1 W/4 m, EN54-24	85,8 dB
Beam angle -6dB 1/2/4 kHz	180° /135°/60°
Hole cut-out Ø	166 mm
Outside dimensions x installation depth	199 mm x 76 mm
Weight, colour	0,7 kg; white (similar to RAL 9010)
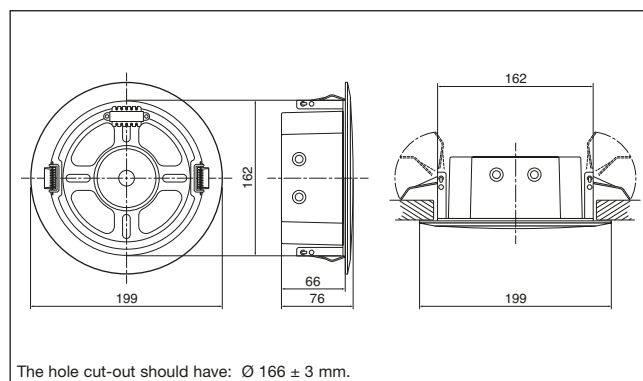
The hole cut-out should have: Ø 166 ± 3 mm.

Model designation

Alarming Ceiling-Speaker . . . .**SRC-606 EN**
6 W, with 100 V-transformer and dust cover

VOICE EVACUATION CEILING SPEAKER

EN 54-24 CERTIFIED

RCS

2x **6W** | Adaptions 1,5 / 3 / 6 W

100 V

PASSIVE

ACTIVE

EN 54-24 certified

Certificat No. 1438-CPR-0475

BS 5839

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).

★
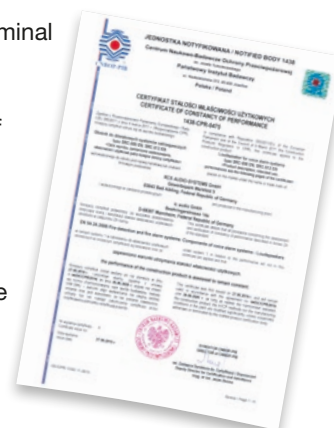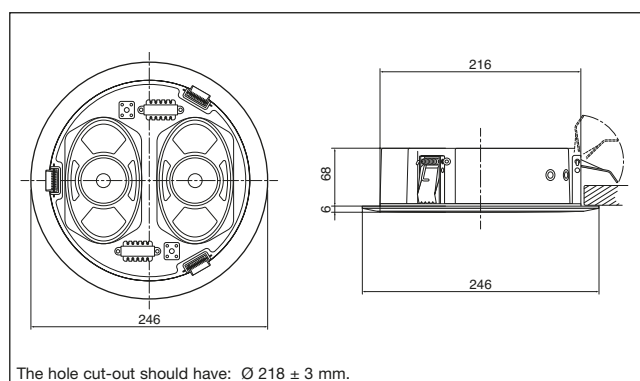
Technical data	SRC-612 EN
Nominal load capacity (music load cap.)	2 x 6 (15) W
Adjustments at 100 V	2 x 6-3-1,5 W
Frequency range	101 – 22.900 Hz
Sound pressure 1 W/1 m	89,0 dB
Sound pressure Pmax/4 m	89,7 dB
Sensitivity 1 W/4 m, EN54-24	79,0 dB
Beam angle -6dB 1/2/4 kHz	180°/137°(v)77°(h)/49°(v)22°(h)
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)

216

68

6

246

246

The hole cut-out should have: Ø 218 ± 3 mm.

Model designation

Alarming Ceiling-Speaker . . . . **SRC-612 EN**
2x 6 W, with 2x 100 V-transformer and dust cover

VOICE EVACUATION CEILING SPEAKER

EN 54-24 CERTIFIED

100 V

PASSIVE

ACTIVE

6W Adaptions 1,5 / 3 / 6 W

EN 54-24 certified

Certificat No. 1438-CPR-0473

Under fire regulation

BS 5839

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	93,0 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)

Ø193
152
111
220
220
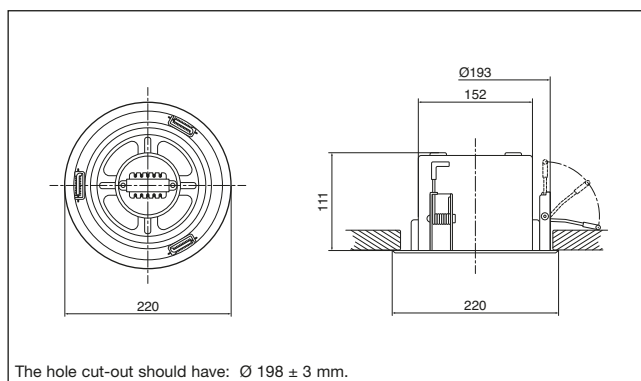
The hole cut-out should have: Ø 198 ± 3 mm.

Model designation

Alarming Ceiling-Speaker . . . . **RC-606 EN**
6 W, with 100 V-transformer and dust cover

VOICE EVACUATION CEILING SPEAKER

EN 54-24 CERTIFIED

R·C·S

2x **6W** Adaptions 1,5 / 3 / 6 W

100 V

~~PASSIVE~~

~~ACTIVE~~

EN 54-24 certified

Certificat No. 1438-CPR-0473

Under fire regulation

BS 5839

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

- Teemperature resistance of -20/+80° C

- Protection class IP21C

- Speaker with moisture impregnation.

- The speaker comes with a metal fire pot.

★
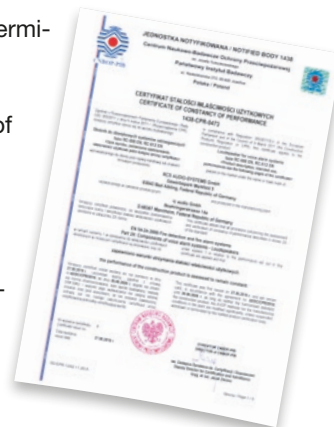
Technical data	RC-612 EN
Nominal load capacity (music load cap.)	2 x 6 (15) W
Adjustments at 100 V	2 x 6-3-1,5 W
Frequency range	120 – 23.500 Hz
Sound pressure 1 W/1 m	89,0 dB
Sound pressure Pmax/4 m	100,5 dB
Sensitivity 1 W/4 m, EN54-24	80,8 dB
Beam angle -6dB 1/2/4 kHz	180°/70°(v)80°(h)/32°(v)41°(h)
Hole cut-out Ø	243 mm
Outside dimensions x installation depth	267 mm x 138 mm
Weight, colour	2,2 kg; white (similar to RAL 9010)

The hole cut-out should have: Ø 243 ± 3 mm.
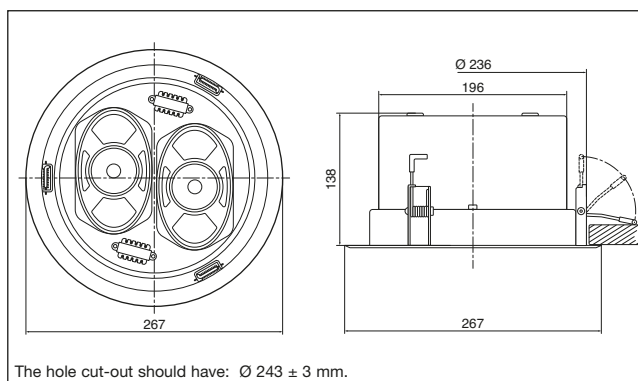
Model designation

Alarming Ceiling-Speaker . . . . **RC-612 EN**
2x 6 W, with 2x 100 V-transformer and fire-proof steel-pot
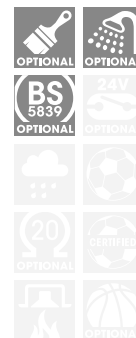
VOICE EVACUATION CEILING SPEAKER

EN 54-24 CERTIFIED

MADE IN GERMANY

6W Adaptions 1,5 / 3 / 6 W

EN 54-24 certified

Certificat No. 1488-CPR-0185/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.

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**

- We offer this loudspeaker also as moisture proof version. The technical data is the option "FI-100" speaker and transformer is especially impregnated.

★

79.0
70.0
10.0
185.0
220.0
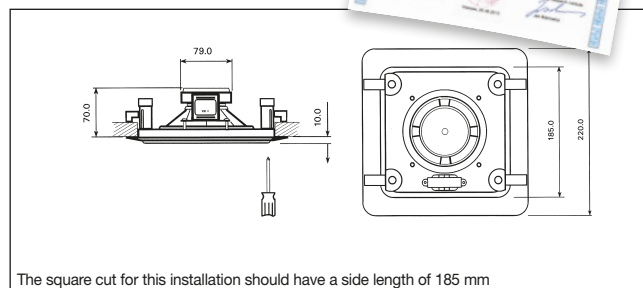
The square cut for this installation should have a side length of 185 mm

Technical data	SC-106 EN-1
Load rating (Music Power)	6 W (15 W)
Adaptions at 100 V	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, Colour	1,1 kg, white

Model designation

Alarming Ceiling Speaker......................**SC-106 EN-1**
6 W, 100 V-transformer, white

VOICE EVACUATION CEILING SPEAKER

EN 54-24 CERTIFIED

RCS

MADE IN GERMANY

100 V

PASSIVE

ACTIVE
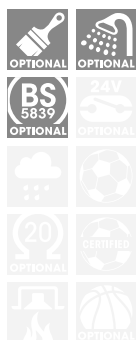
2x **6W** Adaptions 1,5 / 3 / 6 W

EN 54-24 certified

Certificat No. 1488-CPR-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 50849/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.

★
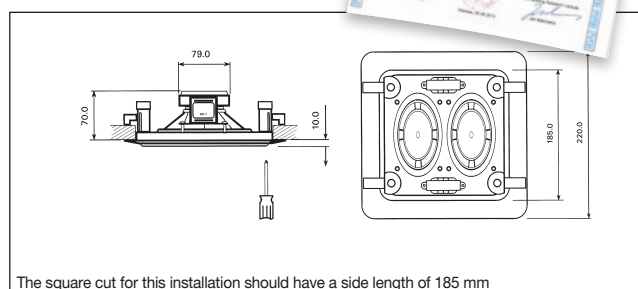
The square cut for this installation should have a side length of 185 mm

Technical data	SC-512 EN-1
Load rating (Music Power)	2x 6 W (15 W)
Adaptions at 100 V	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, Colour	1,3 kg, white

Model designation

Alarming Ceiling Speaker......................**SC-512 EN-1**
2x 6 W, with 2x 100 V-transformer, white

RCS

VOICE EVACUATION CABINET SPEAKER

100 V

PASSIVE

ACTIVE

MADE IN GERMANY

6 W — Adaptions 1,5 / 3 / 6 W

EN 54-24 certified

**Certificat No.
1488-CPR-0186/W**

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 theft save and can be mounted horizontally, vertically on wall or ceiling.

★

front view — 204 — 254
rear view
side view — 85
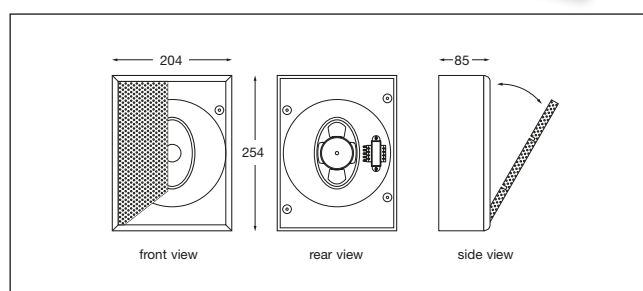
Technical data	BC-106 EN
Load rating (program)	6 W (15 W)
Transformer tappings at 100 V	6 / 3 / 1,5 W
Frequency range (±10dB)	120 – 17.000 Hz
Sound pressure at 1 W/1 m	87 dB
Sound pressure SPL Pmax/1 m	95 dB
Angle of refl. beam 1kHz	175° horizontal / 160° vertical
Speaker and impedance	4″x2,5″, 8 ohms
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 100 V-transformer, white

VOICE EVACUATION CABINET SPEAKER

EN 54-24 CERTIFIED

RCS

MADE IN GERMANY

100 V

PASSIVE

ACTIVE

2x **6W** Adaptions 1,5 / 3 / 6 W

broadband chassis

EN 54-24 certified

Certificat No. 1488-CPR-0179/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 50849/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 theft save and can be mounted horizontally, vertically on wall or ceiling.

● Optimal sound quality for voice alarm announcements and corresponding attention and alarm signals.

★

	204		85
		254	
front view	rear view	side view	
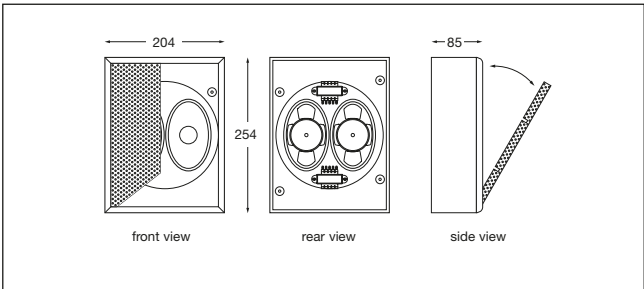
Technical data	BC-512 EN
Load rating (program)	2x 6 (15) W
Transformer tappings at 100 V	2x 6 W - 3 W - 1,5 W
Frequency range (±10dB)	90 – 17.000 Hz
Sound pressure at 1 W/1 m	92 dB
Sound pressure SPL Pmax/1 m	102 dB
Angle of refl. beam 1kHz	175° horizontal / 180° vertical
Speaker and impedance	2 St. 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 100 V-transformer, white

RCS

VOICE EVACUATION CABINET SPEAKER

EN 54-24 CERTIFIED

6W Adaptions 1,5 / 3 / 6 W

NEW

EN 54-24 certified

Certificat No. 1438-CPR-0615

Under fire regulation
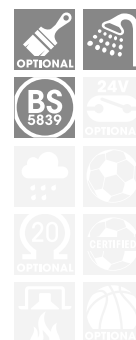
BS 5839

MDF-CORPUS

Description

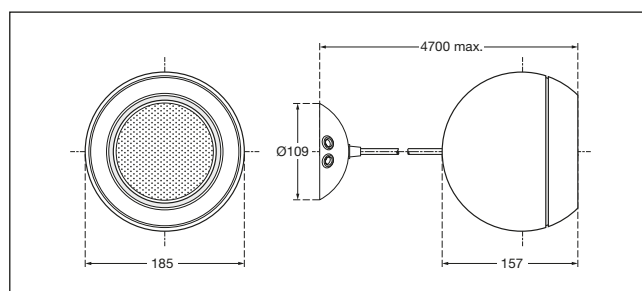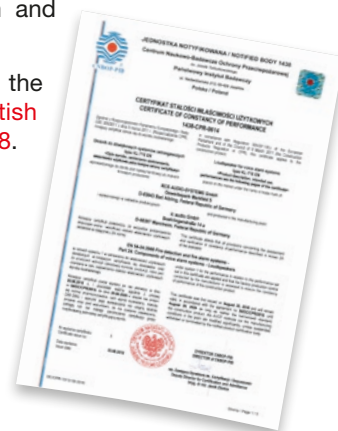**This loudspeaker is tested by a notified product certification authority and certified to EN 54-24:2008.**

The 6W speaker is equipped with a 165mm broadband speaker chassis and a 100V transformer with three power adjustments. The high-density, impact-resistant and low-resonance housing enables optimal sound.

The speaker is therefore ideal for use in voice alarm systems and the playback of attention and alarm signals.

Please consider the following features:

- The housing is made of coated, impact-resistant housing MDF wood and is absolutely design-related vibration and drone free.

- Broadband, high-performance speaker chassis with integrated tweeter cone.

- For added reliability, the integrated 2-pole ceramic terminal and thermal fuse, as well the moisture impregnation of the loudspeaker chassis.

- The loudspeaker is also protected against the risks of environmental influences with its high protection class IP 54.

- The proven spring snap on the back wall ensures fast wall mounting.

- A sturdy perforated steel grille cover ensures continuous stability.

- The loudspeaker is also compliant with British Standard BS 5839, Part 8.

★
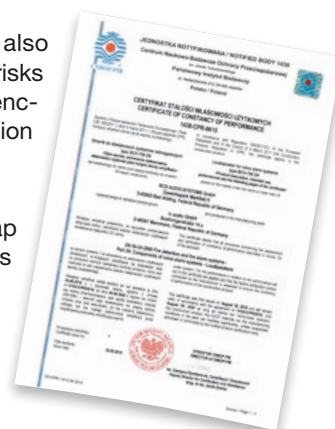
Technical data	BC-706 EN
Load rating (program)	6 (15) W
Transformer tappings at 100 V	6 W - 3 W - 1,5 W
Frequency range (±10dB)	175 - 23.500 Hz
Sound pressure at 1 W/1 m	91,6 dB
Sound pressure SPL Pmax/1 m	96,3 dB
Angle of refl. beam 1kHz	160° horizontal / 160° vertical
Speaker and impedance	165 mm / 8 ohms
Protection class	IP 54
Dimensions, HxWxD	254 x 195 x 81 mm
Weight	1,95 kg
Colour corpus / grille	white

195   81

254

front view   rear view   side view
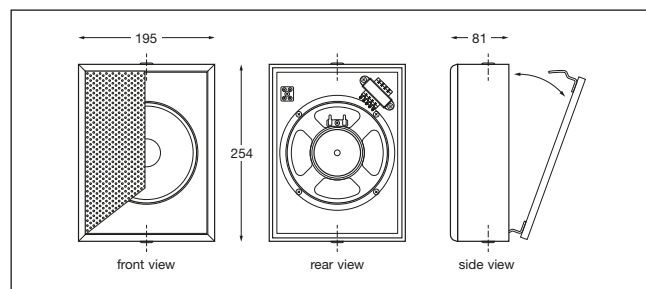
Model designation

Alarming Cabinet-Speaker .... **BCH-706 EN**
6 W, with 100 V-transformer, white

VOICE EVACUATION CABINET SPEAKER

EN 54-24 CERTIFIED

RCS

2x **6W** Adaptions 1,5 / 3 / 6 W
broadband chassis

100 V

PASSIVE

ACTIVE

EN 54-24 certified

Certificat No. 1438-CPR-0616

Under fire regulation

BS 5839

MDF-CORPUS
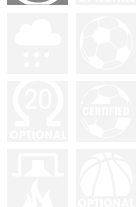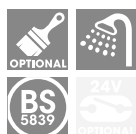
Description

This loudspeaker is tested by a notified product certification authority and certified to EN 54-24:2008.

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 50849/VDE 0828 and VDE 0833-4.

Please consider the following features:

- The housing is made of coated, impact-resistant housing MDF wood and is absolutely design-related vibration and drone free.

- The 2x 6W speaker is equipped with two broadband speaker chassis and two 100V transformers with three power adjustments.

- For added reliability, the integrated 2-pole ceramic terminal and thermal fuse, as well the moisture impregnation of the loudspeaker chassis.

- The loudspeaker is also protected against the risks of environmental influences with its high protection class IP 54.

- The proven spring snap on the back wall ensures fast wall mounting.

- A sturdy perforated steel grille cover ensures continuous stability.

- The loudspeaker is also compliant with British Standard BS 5839, Part 8.

★
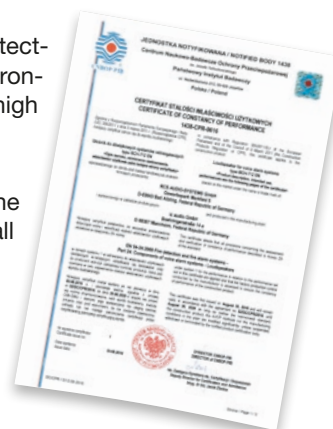
Technical data	BC-712 EN
Load rating (program)	2x 6 (15) W
Transformer tappings at 100 V	2x 6 W - 3 W - 1,5 W
Frequency range (±10dB)	162 - 23.500 Hz
Sound pressure at 1 W/1 m	93,0 dB
Sound pressure SPL Pmax/1 m	101,6 dB
Angle of refl. beam 1kHz	145° horizontal / 180° vertical
Speaker and impedance	2 St. 5″x3″ / 8 ojms
Protection class	IP 54
Dimensions, HxWxD	254 x 195 x 81 mm
Weight	2,24 kg
Colour corpus / grille	white

195
254
81
front view   rear view   side view
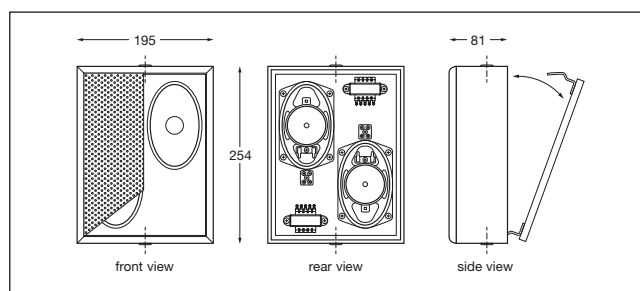
Model designation

Alarming Cabinet-Speaker .... **BCH-712 EN**
2x 6 W, with 2x 100 V-transformer, white

VOICE EVACUATION CABINET SPEAKER

EN 54-24 CERTIFIED

10W Adaptions 1,5/3/6/10W

100 V

PASSIVE

ACTIVE

EN 54-24 certified

Certificat No. 1438-CPR-0760

Under fire regulation
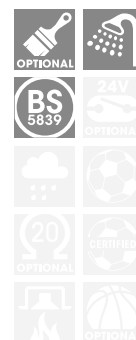
BS 5839

NEW

Description

This loudspeaker is tested by a notified product certification authority and certified to EN 54-24:2008.

This ceiling 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:

- 165 mm broadband chassis for excellent speech and music reproduction.
- Plastic coated metal version
- Quick and uncomplicated assembly by screwing the metal back wall.
- Flat and elegant design for inconspicuous installations, because of the metall back plate without an annoying »collar«.

- 2-pole ceramic terminals with thermal fuse
- Teemperature resistance of -10/+55 °C
- Protection class IP21C
- Speaker with moisture impregnation.
- The speaker is delivered with a metal back plate.

★
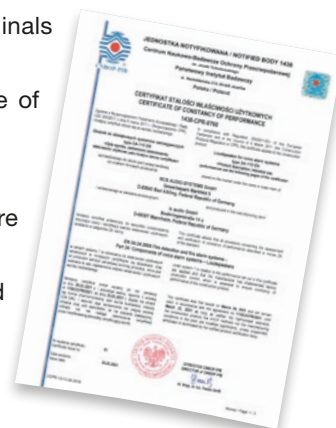
Technical data	DA-110 EN
Load rating (program)	10 (15) W
Transformer tappings at 100 V	10 / 6 / 3 / 1,5 W
Frequency range (±10dB)	230 – 24.000 Hz
Sound pressure at 1 W/1 m	93,0 dB
Sound pressure Pmax/4 m	100,2 dB
Sensitivity 1 W/4 m, EN54-24	81,0 dB
Angle of refl. beam -6dB 1/2/4 kHz	180° /105° / 50°
Speaker Ø / impedance	165 mm / 8 Ohm
Dimensions Ø / Height	Ø 170 mm x 76 mm
Weight, Colour	1,23 kg; white (similar to RAL 9010)

63.5   54   127   170   76
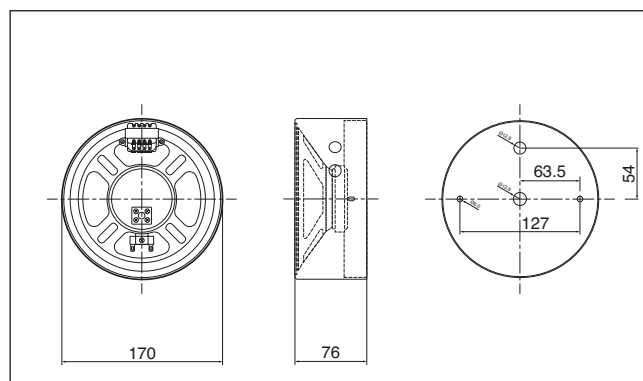
Model designation

Alarming Ceiling Speaker........................ **DA-110 EN**
10 W, with 100 V-transformer, white

VOICE EVACUATION CABINET SPEAKER

EN 54-24 CERTIFIED

RCS
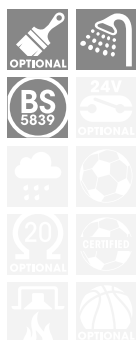
2x **6W** Adaptions 1,5 / 3 / 6 W

broadband chassis

100 V

PASSIVE

ACTIVE

EN 54-24 certified

**Certificat No.
1438-CPR-0726**

**Under fire
regulation**

BS 5839

Description

This loudspeaker is tested by a notified product certification authority and certified to EN 54-24:2008.

This ceiling 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 chassis for excellent speach and music reproduction.

● Plastic coated metal version

● Quick and uncomplicated assembly by screwing the metal back wall.

● Flat and elegant design for inconspicuous installations, because of the metal back plate without an annoying »collar«.

● 2 pieces 2-pole ceramic terminals with thermal fuse

● Teemperature resistance of -10/+55 °C

● Protection class IP21C

● Speaker with moisture impregnation.

● The speaker is delivered with a metal back plate.

★
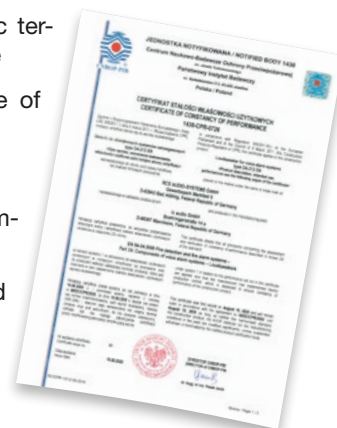
Technical data	DA-212 EN
Load rating (program)	2x 6 (15) W
Transformer tappings at 100 V	2x 6 / 3 / 1,5 W
Frequency range (±10dB)	127 – 23.500 Hz
Sound pressure at 1 W/1 m	92,0 dB
Sound pressure Pmax/4 m	98,6 dB
Sensitivity 1 W/4 m, EN54-24	80,0 dB
Angle of refl. beam -6dB 1/2/4 kHz	160° / 72°(v) 122°(h) / 37°(v) 86°(h)
Speaker Ø / impedance	2x 4″x2.5″ mm, 8 Ohm
Dimensions Ø / Height	Ø 208 mm x 89 mm
Weight, Colour	1,9 kg; white (similar to RAL 9010)

208   89   83   72   166
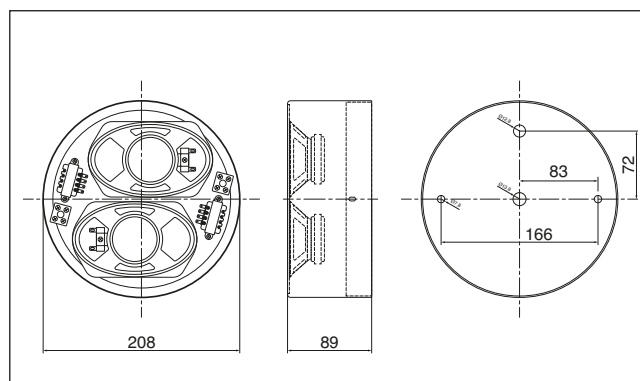
Model designation

Alarming Ceiling Speaker........................ **DA-212 EN**
2x 6 W, with 2x 100 V-transformer, white

VOICE EVACUATION CABINET SPEAKER

EN 54-24 CERTIFIED

30W Adaptions 3,25/7,5/15/30W

2-Way-System

EN 54-24 certified

Certificat No. 1488-CPR-0313/W

Under fire regulation
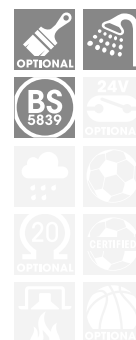
BS 5839

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 100 V-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-552 WTBS
Load rating (program)	30 W (50 W)
Transformer tappings at 100 V	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
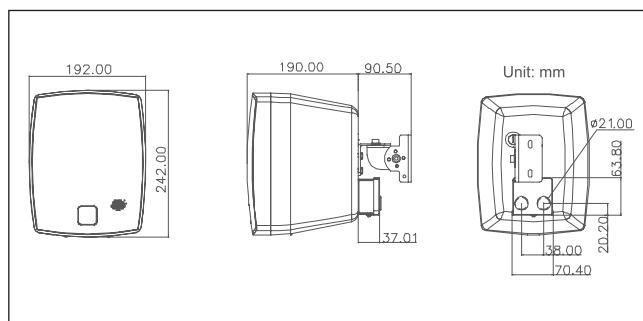
Model designation

Alarming Ceiling Speaker, 30 W . . . . **CT-552 WTBS**
2 way, with 100 V-transformer, white

VOICE EVACUATION BALL SPEAKER

EN 54-24 CERTIFIED

16W Adaptions 4/8/16 W
broadband chassis

100 V

PASSIVE

ACTIVE

EN 54-24 certified

Certificat No. 1438-CPR-0614

Under fire regulation

BS 5839

Description

This loudspeaker is tested by a notified product certification authority and certified to EN 54-24:2008.

The compact 16 W strong ball speaker is equipped with a 130 mm broadband loudspeaker chassis and a 100 V transformer with three power adjustments. The impact-resistant, UV-resistant ABS plastic housing in RAL 9010 guarantees long-lasting stability.

Please consider the following features:

- The ball speaker are made of impact and scratch-resistant, white plastic and are particularly suitable for high ceilings where suspended speakers are necessary.

- Broadband, high-performance loudspeaker chassis with integrated tweeter cone.

- For added reliability, the integrated 2-pole ceramic terminal and thermal fuse, as well the moisture impregnation of the loudspeaker chassis.

- The loudspeaker is also secured against the risks of environmental influences with the high protection class IP 35.

- The connection is made via a 4-core, 4.5 m long cable. Quick and uncomplicated assembly using the fastening hook.

- Optimal sound for voice alarm announcements and corresponding attention and alarm signals.

- The speaker also has the conformity to the British standard BS 5839, part 8.

★

Technical data	KL-716 EN
Load rating (program)	16 (30) W
Transformer tappings at 100 V	16 W - 8 W - 4 W
Frequency range (±10dB)	130 - 23.500 Hz
Sound pressure at 1 W/1 m	85,0 dB
Sound pressure SPL Pmax/4 m	86,5 dB
Angle of refl. beam 1kHz -6dB	196°
Speaker Ø and impedance	130 mm / 8 Ohm
Dimensions	Ø 185 x H 157 mm (cable length approx. 4,5 m)
Weight	1,5 kg
Colour	white (RAL 9010)

4700 max.
Ø109
185
157

Model desgination

Alarming Ball Speaker . . . . **KL-716 EN**
16 W, wit 100 V-transformer, white

VOICE EVACUATION 2-WAY SPEAKER

EN 54-24 CERTIFIED

Examples of mounting options
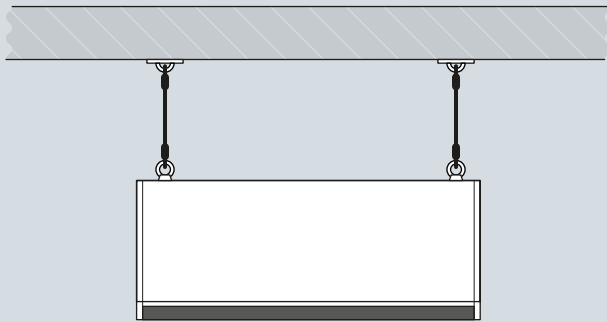
Wire suspension (straight)
with optional rigging eyelets
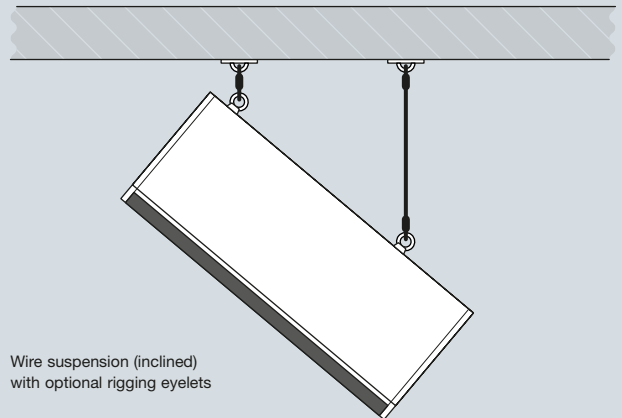
Wire suspension (inclined)
with optional rigging eyelets
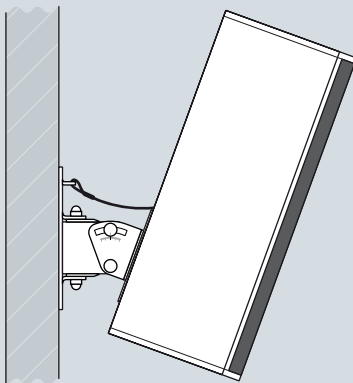
Wall mounting
with wall bracket XWH-200A
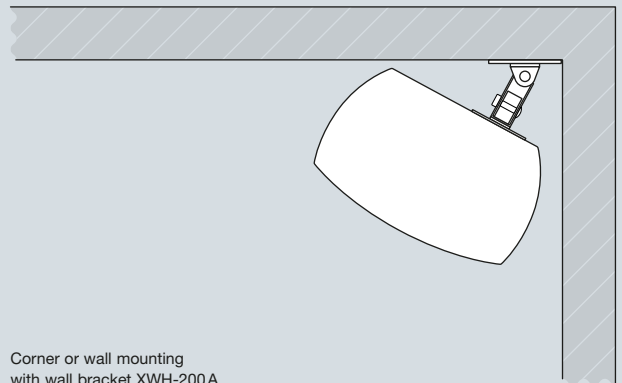
Corner or wall mounting
with wall bracket XWH-200A

HIGHLIGHTS

◀)) **Neodym** tweeter

◀)) **121 dB** Sound pressure

+ **Ball-proof certified**

◀)) **2-way** system

◀)) **Acoustically optimized**
for speech intelligibility

— Accessories: —

This wall bracket is made of powder-coated steel. It can be precisely aligned horizontally (160 °) and vertically (40° downwards) and is continuously adjustable.

Equipped with a universal mounting plate. The 6 mm thick wall plate has an eyelet for safety ropes (according to BGV C1). The wall mount is certified ball-proof according to DIN 18032-3.

Wall bracket, black **XWH-200A**
for XES-212 EN, 160° swiveling, 40° tilting, loadable up to 30 kg

VOICE EVACUATION 2-WAY SPEAKER
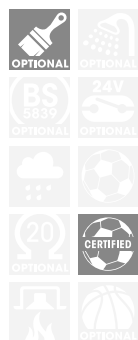
EN 54-24 CERTIFIED

MADE IN GERMANY

100V

PASSIVE

ACTIVE

200W Adaptions 100/200W

2-Way-System

EN 54-24 **certified**

**Cerfificat No.
1488-CPR-0855/W**

**BALL-THROW-PROOF CERTIFIED
DIN 18 032-3**

Xorva ›E‹
S E R I E

Description

This loudspeaker is tested by a notified product certification authority and certified to EN 54-24:2008.

This professional 2-way box from the Xorva›E‹ series is ideal for transmitting voice alarms and music. It includes a 2-way system with a 12˝ neodym bassmidrange driver and 1˝ neodym driver. Everything installed in an acoustically professionally designed housing made of birch wood and aluminum.

This loudspeaker meet the requirements of EN 54-24.

Please consider the following features:

⚫ Predestined for use in voice alarm systems and in demanding, professional PA areas (e.g. for sports halls or school auditoriums).

⚫ Stable construction and sophisticated sound of the highest quality – Made in Germany.

⚫ The built-in high quality 100V ring-core transformer supports the particularly linear frequency response with almost no loss of sound or performance.

⚫ There are two speaker sockets on the back of the device for connecting or looping through the audio signal.

⚫ In particular, these speakers are for fixed installation (for example, for school gyms, meeting halls, etc.).

⚫ Threaded nuts for rigging eyes.

★

Scan me

Watch the ball shot video

There are two speaker sockets on the back of the housing.

Wall bracket XWH-200 A optionally available.

Technical data	XES-212 EN
Load rating (Music Power)	200 W (450 W)
Adaptions at 100 V	200 / 100 W
Frequency range (±3dB)	60 – 20.000 Hz
Sound pressure at 1W/1m	97 dB
Sound pressure SPL Pmax/1m	121 dB @1kHz
Angle of refl. beam (-6dB) 1/2/4 kHz	140°/ 143°/ 100°
Speaker Ø and Impedance	12˝ ND-speaker, 1˝ ND-driver; 8 ohms
Dimensions (HxWxD)	568 x 374 x 230 mm
Weight, Colour	15,3 kg; black

Model designation

Alarming-Speaker, 200 W, black, 2-way System, with 100V transformer, black, incl. 1x speaker plug . . . . **XES-212 EN SW**

Alarming-Speaker, 200 W, white, 2-way System, with 100V transformer, black, incl. 1x speaker plug . . . . **XES-212 EN WS**

RCS

VOICE EVACUATION PROJECTOR SPEAKER

EN 54-24 CERTIFIED

20W Adaptions 5 / 10 / 20 W
broadband chassis

EN 54-24 certified

Certificat No. 1438-CPR-0302/W

Under fire regulation
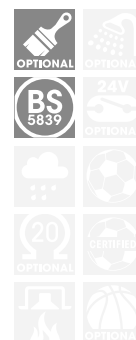
BS 5839

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 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-52 WHBS
Load rating (Music Power)	20 W (35 W)
Adaptions at 100 V	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
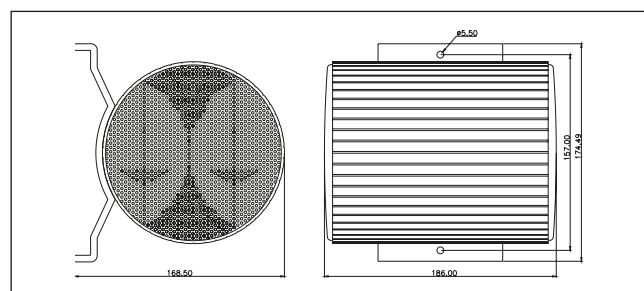
Model designation

Double direction speaker...................**SPJ-52 WHBS**
20 W, with 100 V-transformer, white

VOICE EVACUATION PROJECTOR SPEAKER

EN 54-24 CERTIFIED

R·C·S

20W Adaptions 5 / 10 / 20 W

broadband chassis

100 V

PASSIVE

ACTIVE

EN 54-24 certified

Certificat No. 1438-CPR-0302/W

Under fire regulation

BS 5839
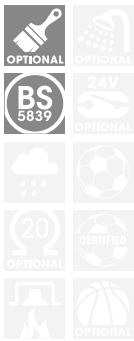
Description

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 100 V	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

207.00

Ø140.00
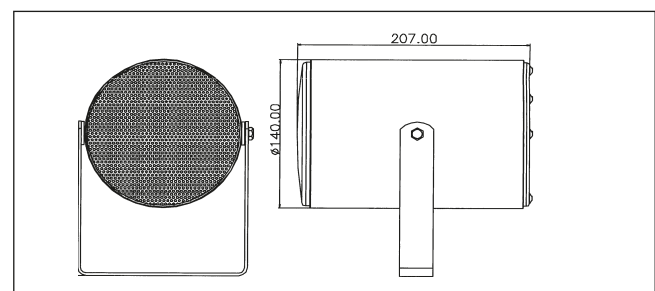
Model designation

Alarming Sound Projector . . . .**SPJ-53 WHBS**
20 W, with 100 V-transformer, white

VOICE EVACUATION MUSIC-HORN SPEAKER

EN 54-24 CERTIFIED

100 V

PASSIVE

ACTIVE

60W 7,5/15/30/60 W Adaptions

2-Way-System

EN 54-24 certified

Certificat No.
1488-CPR-0315/W

Under fire regulation
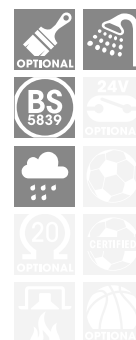
BS 5839

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-6HT60 WHBS 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 us 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.

● 100 V-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 100 V	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 gray (RAL-7035)
Weight	7,05 kg

417.81   391.07

332.08

255.00   166.38

ø10.00

141.50

Unit: mm
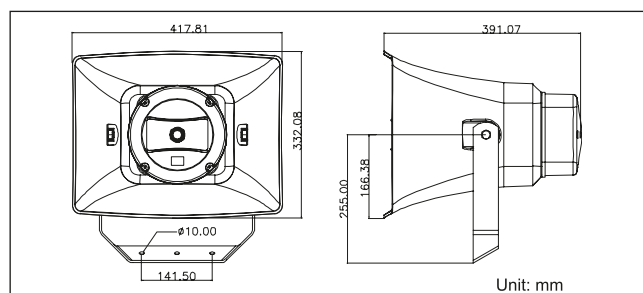
Model designation

Alarming Music Horn, 60 W................. **CS-6HT60 BS**
20 W, with 100 V-transformer, light gray

VOICE EVACUATION HORN SPEAKER

EN 54-24 CERTIFIED
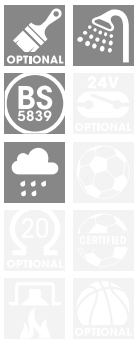
RCS

30W Adaptions 3,25/7,5/15/30W

100 V

~~PASSIVE~~

~~ACTIVE~~

EN 54-24 certified

**Certificat No.
1488-CPR-0314/W**

Under fire regulation

BS 5839

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 100 V 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 100 V	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 gray (RAL-7035)
Weight	approx. 2,05 kg

ø211.79   279.30

105.90

121.36

60.00   ø7.00

Unit: mm
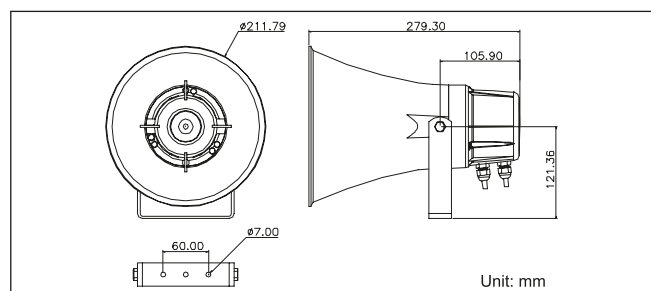
Model designation

Alarming Horn Speaker .... **PHS-81T30 BS**
30 W, with 100 V-transformer, white

157

RCS

A/B ALARMING CEILING SPEAKER
COMPLIANT TO IEC 50849/VDE 0828

100V

PASSIVE

ACTIVE

MADE IN GERMANY

| 2x | 6W | Adaptions 1,5/3/6W |
| 2x | 10W | Adaptions 2,5/5/10W |
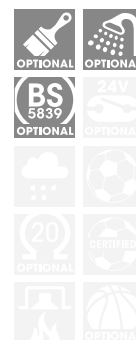
Description

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 50849/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 theft save 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.

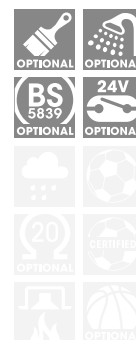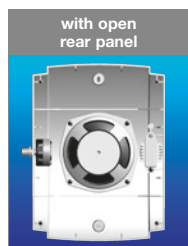- All loudspeaker types are available on all RAL colours on request.

★

The hole cut-out should have: Ø 200 mm ± 5 mm.

Technical data	RC-412 AB	RC-420 AB
Load rating (program)	2x 6 (15) W	2x 10 (15) W
Transformer tappings at 100 V	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
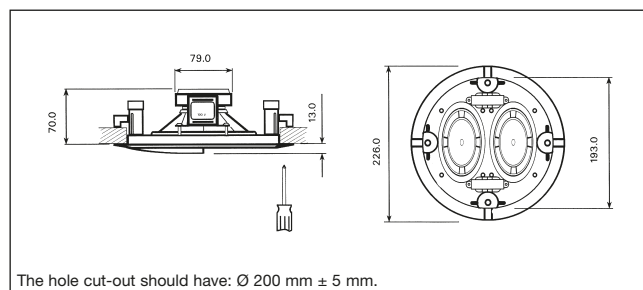
Model designations

A/B-Alarming Ceiling-Speaker ....**RC-412 AB**
2x 6 W, with 2x 100 V-transformer, white

A/B-Alarming Ceiling-Speaker ....**RC-420 AB**
2x 10 W, with 2x 100 V-transformer, white

A/B ALARMING CEILING SPEAKER

COMPLIANT TO IEC 50849/VDE 0828

R·C·S

100V

2x	**6W**	Adaptions 1,5/3/6 W
2x	**10W**	Adaptions 2,5/5/10 W

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 50849/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 theft save 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.

★

The square cut for the installation should have a side length of 185 mm.
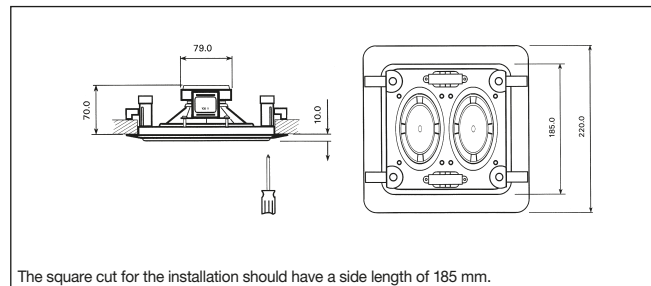
Technical data	SC-512 AB	SC-520 AB
Load rating (program)	2 x 6 (15) W	2 x 10 (15) W
Transformer tappings at 100 V	2 x 6 / 3 / 1,5 W	2 x 10 / 5 / 2,5 W
Frequency range (±10dB)	90 – 16.000 Hz	90 – 16.000 Hz
Sound pressure at 1 W/1 m	95 dB	96 dB
Sound pressure SPL Pmax/1 m	111,2 dB @182Hz	113,4 dB @182Hz
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

Installation case made of soaked chip-board, 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**

Model designations

A/B-Alarming Ceiling-Speaker .... **SC-512 AB**
2x 6 W, with 2x 100 V-transformer, white

A/B-Alarming Ceiling-Speaker .... **SC-520 AB**
2x 10 W, with 2x 100 V-transformer, white

RCS

A/B ALARMING CABINET SPEAKER

100 V

PASSIVE

ACTIVE

2x **6W** Adaptions 1,5 / 3 / 6 W

2x**10W** Adaptions 2,5 / 5 / 10 W

MADE IN GERMANY

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 50849/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 theft save 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.

★

front view   rear view   side view

Technical data	BC-512 AB	BC-520 AB
Load rating (program)	2x 6 (15) W	2x 10 (15) W
Transformer tappings 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
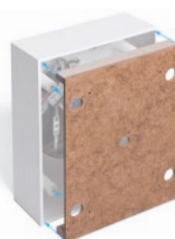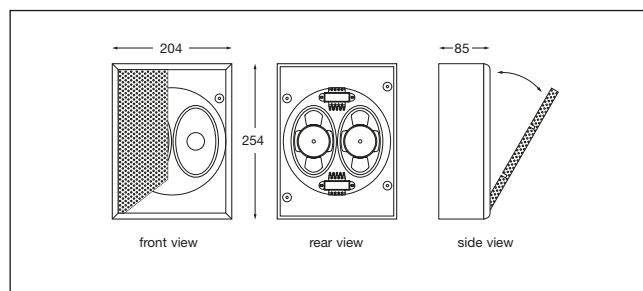
Wooden/MDF rear wall for simple Pressing onto the back of the speaker cabinet. Fits the following types of speakers:

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 50849/VDE 0828
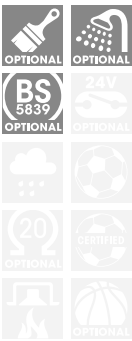
R·C·S

100 V

PASSIVE

ACTIVE

| 2x | **6W** | Adaptions 1,5 / 3 / 6 W |
| 2x | **10W** | Adaptions 2,5 / 5 / 10 W |

MDF-CORPUS

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 50849/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-612 AB	BCH-620
Load rating (program)	2x 6 W (15 W)	2x 10 W (15 W)
Transformer tappings at 100 V	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

200

250

85

front view   rear view   side view
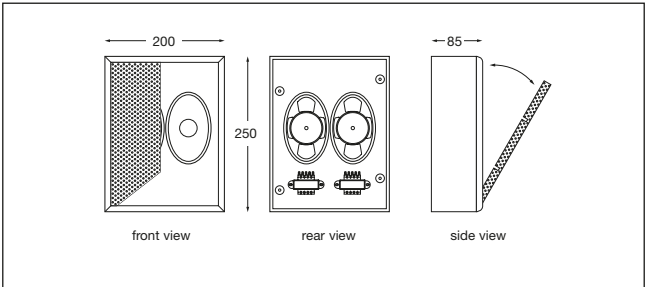
Model designations

A/B-Alarming Cabinet Speaker . . . . **BCH-612 AB**
2x 6 W, with 2x 100 V-transformer, white

A/B-Alarming Cabinet Speaker . . . . **BCH-620 AB**
2x 10 W, with 2x 100 V-transformer, white

„Design"-CABINET SPEAKER

MADE IN GERMANY

| 6W | Adaptions 1,5 / 3 / 6 W |
| 10W | Adaptions 2,5 / 5 / 10 W |

with open rear panel

with control

without control

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.

★

SIDE VIEWS

side view   front view   rear view

Technical data	BC-006 (R)	BC-010 (R)
Load rating (Music power)	6 (15) W	10 (15) W
Transformer tappings at 100 V	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 @1,3Hz	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)

R·C·S
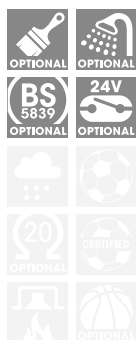
100 V

PASSIVE

ACTIVE

| 6W | Adaptions 1,5 / 3 / 6 W |
| 10W | Adaptions 2,5 / 5 / 10 W |

with closed rear panel

with control

without control

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 100 V-line by external screw-type terminal.

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.

★

SIDE VIEWS

221
270
66
side view

221
270
204
front view

221
270
204
rear view

Technical data	BCR-006 (R)	BCR-010 (R)
Load rating (Music power)	6 (15) W	10 (15) W
Transformer tappings at 100 V	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 @1,3Hz	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 transf., rear panel. . **BCR-006**
Design-Cabinet Speaker 10 W, 100V transf.,rear panel . **BCR-010**

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**

R·C·S

100 V

PASSIVE

ACTIVE

10W	Adaptions 2,5/5/10 W
20W	Adaptions 5/10/20 W
30W	Adaptions 7,5/15/30 W

with professioal
2-way coaxial chassis

MADE IN GERMANY
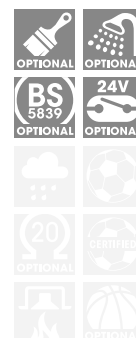
ıtrol

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 theft save 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 tappings at 100 V	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 contol (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.

200 | 250 | 85

front view | rear view | side view

Cabinet Speaker 10 W, with 2-way coaxial chassis . . . . **BC-110 C**
with 100V matching transformer (10 – 5 – 2.5 W), white

Cabinet Speaker 20 W, with 2-way coaxial chassis . . . . **BC-120 C**
with 100V matching transformer (20 / 10 / 5 W), white

Cabinet Speaker 30 W, with 2-way coaxial chassis . . . . **BC-130 C**
with 100V matching transformer (30 – 15 – 7.5 W), white

Cabinet Speaker 10 W, with 2-way coaxial chassis . . . . **BC-110 CR**
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-120 CR**
with 100V matching transformer (20 / 10 / 5 W), white and built-in L-Control

Cabinet Speaker 30 W, with 2-way coaxial chassis . . . . **BC-130 CR**
with 100V matching transformer (30 – 15 – 7.5 W), white and built-in L-Control

CABINET SPEAKER (with 100 V-transformer)
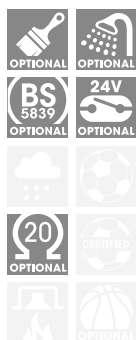
R·C·S

100 V

~~PASSIVE~~

~~ACTIVE~~

4W	Adaptions 1/2/4W
6W	Adaptions 1,5/3/6W
10W	Adaptions 2,5/5/10W

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 theft save and can be mounted horizontally, vertically or to the ceiling.

- There is room in the cabinet to mount relays, if necessary.
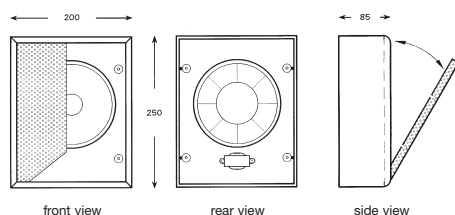
Technical data	BC-104 (R)	BC-106 (R)	BC-110 (R)
Load rating (Music power)	4 (15) W	6 (15) W	10 (15) W
Transformer tappings at 100 V	4 / 2 / 1 W	6 / 3 / 1,5 W	10 / 5 / 2,5 W
Frequency range	90 – 20.000 Hz	90– 18.000 Hz	90 – 16.000 Hz
Sound pressure at 1W/1m	96 dB	96 dB	96 dB
Sound pressure SPL Pmax/1m	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-110 C/R** to **BC-130 C/R**, **BC-512/520 AB**;

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.

front view   rear view   side view

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**

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**

RCS

100 V

PASSIVE

ACTIVE

MADE IN GERMANY

4W	Adaptions 1/2/4W
6W	Adaptions 1,5/3/6W
10W	Adaptions 2,5/5/10W

Square, also suitable for ceiling mounting.
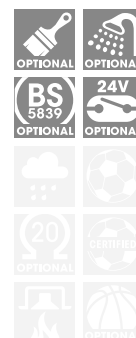
with control

without control

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 theft save and can be mounted horizontally, vertically or to the ceiling.

- In the cabinet is enough free space to install additional relays, if necessary.
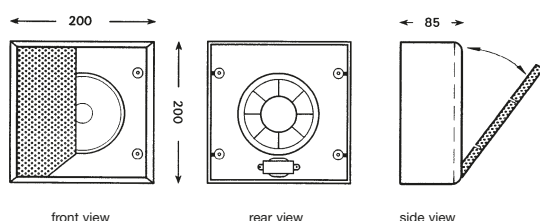
Technical data	BC-304 (R)	BC-306 (R)	BC-310 (R)
Load rating (Music power)	4 (15) W	6 (15) W	10 (15) W
Transformer tappings at 100 V	4 / 2 / 1 W	6 / 3 / 1,5 W	10 / 5 / 2,5 W
Frequency range	100 – 20.000 Hz	100 – 20.000 Hz	100 – 20.000Hz
Sound pressure at 1W/1m	94,5 dB	95 dB	95 dB
Sound pressure SPL Pmax/1m	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.

200

200

85

front view   rear view   side view

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-304 R**
Cabinet Speaker   6 W, with 100V-transf./control. . . . . **BC-306 R**
Cabinet Speaker 10 W, with 100V-transf./control. . . . . **BC-310 R**

CABINET SPEAKER (with 100 V-transformer)

| 6W | Adaptions 1,5 / 3 / 6 W |
| 10W | Adaptions 2,5 / 5 / 10 W |

MDF-CORPUS

without control

with control

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 speach 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 100 V-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-406 R/410 R are delivered with an installed volume control.

- The speakers are available in all RAL colours on request.

Technical data	BCH-406 (R)	BCH-410 (R)
Load rating (Music capacity)	6 (15) W	10 (15) W
Transformer tappings 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	

★
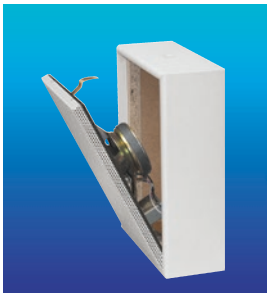
Easy assembly due to comfortable spring snatch lock

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.

200

260

85

front view   rear view   side view

Cabinet Speaker   6 W **BCH-406**
with 100 V-transformer

Cabinet Speaker 10 W **BCH-410**
with 100 V-transformer

Cabinet Speaker   6 W . . . . **BCH-406 R**
with 100 V-transformer and control

Cabinet Speaker 10 W . . . . **BCH-410 R**
with 100 V-transformer and control

WALL AND CEILING SPEAKER

4W	Adaptions 1 / 2 / 4 W
6W	Adaptions 1,5 / 3 / 6 W
10W	Adaptions 2,5 / 5 / 10 W
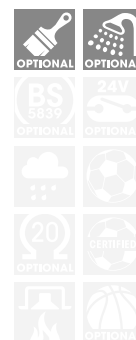
Description

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 theft save 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.

★

The hole cut-out should have: Ø 170 mm ± 5 mm.
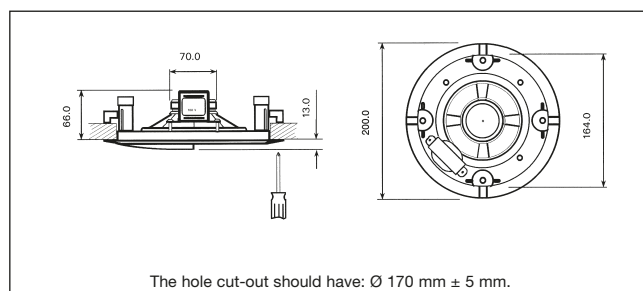
Model designations

Ceiling Speaker, 4 W **RC-104**
with 100 V-transformer, white

Ceiling Speaker, 6 W **RC-106**
with 100 V-transformer, white

Ceiling Speaker, 10 W **RC-110**
with 100 V-transformer, white

Technical data	RC-104	RC-106	RC-110
Load rating (Music power)	4 (6) W	6 (15) W	10 (15) W
Transformer tappings 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

with professioal
2-way coaxial chassis

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 6½″ 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.

★

The hole cut-out should have: Ø 200 mm ± 5 mm.

Technical data	RC-110C	RC-120C	RC-130C
Load rating (Music power)	10 W (40 W)	20 W (40 W)	30 W (40 W)
Transformer tappings at 100 V (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-110C**
with 100V-transformer, white

Ceiling Speaker, 20W with 2-way coaxial chassis **RC-120C**
with 100V-transformer, white

Ceiling Speaker, 30W with 2-way coaxial chassis **RC-130C**
with 100V-transformer, white

100V

PASSIVE

ACTIVE

10W Adaptions 3/6/10W
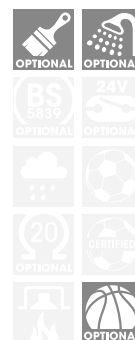
„Snap-In Mount"
Ceiling Speaker
with 100 V-transformer

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 100 V 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.
- The „**BW-200**" option gives the built-in speaker a ball-proof construction.
- 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 100 V-transformer permits different adjustments. Please take further details from the technical data, shown below.

★

178 · 78 · 2 · 210

The hole for mounting should have a diameter of 184 mm ± 5 mm
Depth should amount to at least 78 mm.
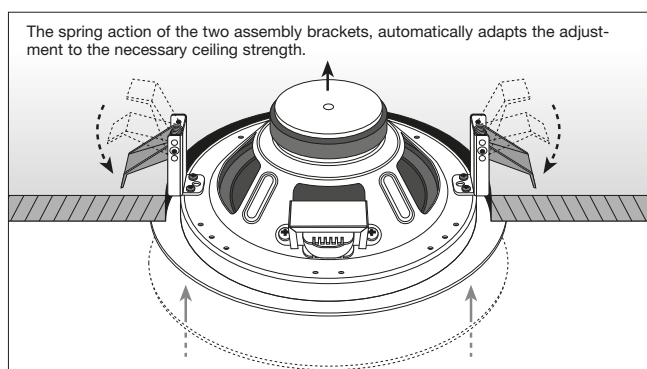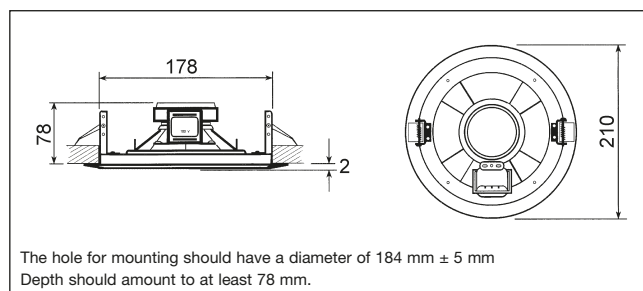
Technical data	RC-210 A
Load rating (Music capacity)	10 W (15 W)
Transformer tappings at 100 V	10 / 5 / 2,5 W
Frequency range	60 – 20.000 Hz
Sound pressure at 1W/1m	94,5 dB
Sound pressure SPL Pmax/1m	105dB@6kHz
Speaker	6,5″ Full-Range
Dimensions Ø, Install. depth (max.)	210 x 78 mm
Hole cut Ø	184 mm (±5mm)
Weight (kg), Colour	approx. 1,4 kg, white

The spring action of the two assembly brackets, automatically adapts the adjustment to the necessary ceiling strength.

Model designation

Snap-In Mount-**Ceiling Speaker, 10 W**......... **RC-210 A**
with 100 V-transformer, white

Built to be ball-proof, (option) **BW-200**

WALL AND CEILING SPEAKER
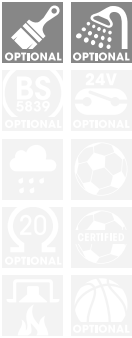
6W Adaptions 1,5 / 3 / 6 W

100 V

PASSIVE

ACTIVE

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 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 100 V 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.

★

The hole for mounting should have a diameter of 195 mm ± 5 mm
Depth should amount to at least 95 mm.

195.0
95,0
5,0
220,0

The spring action of the three assembly brackets, automatically adapts the adjustment to the necessary ceiling strength.
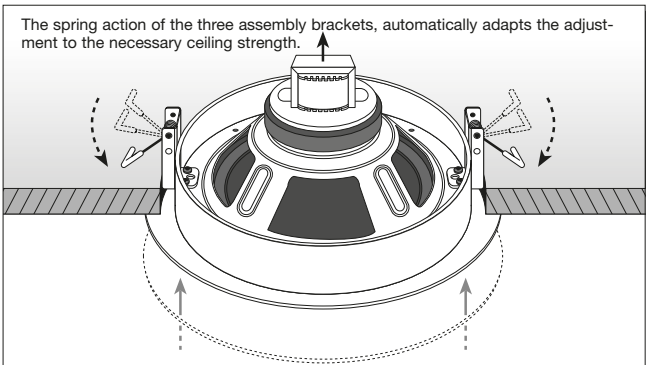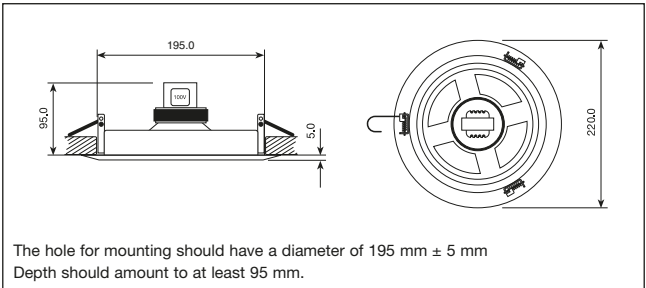
Technical data	RC-306
Load rating (Music capacity)	6 W (15 W)
Transformer tappings at 100 V	6 / 3 / 1,5 W
Frequency range	97 – 20.000 Hz
Sound pressure at 1W/1m	97,5 dB
Sound pressure SPL Pmax/1m	107 dB
Angle of refl. beam (-6dB) 1/4/8 kHz	180°
Speaker Ø (mm) and Impedance	165 mm / 8 ohms
Dimensions Ø, Install. depth (max.)	220 x 95 mm
Weight, Colour	approx. 1,1 kg – white (RAL 9010)

Model designation

Ceiling Speaker, 6 W with 100 V-transformer, white **RC-306**

CEILING SPEAKER

6W Adaptions 2 / 4 / 6 W

PASSIVE

ACTIVE
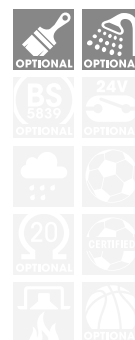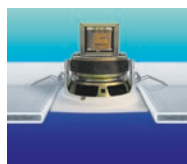
„Spot-Design"
Ceiling speaker
with 100 V-transformer

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 21/2″ 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.
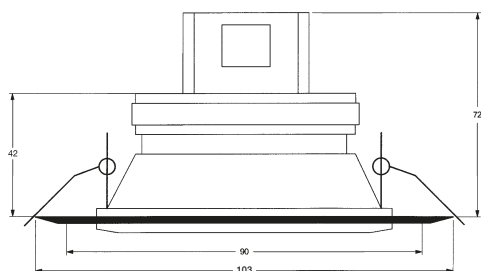
● Special speaker colours are available on request.

● 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-106W
Load rating (Music power)	6 W (10W)
Transformer tappings at 100 V	6 – 4 – 2 W
Frequency range (±10dB)	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-106W**
with 100V-transformer, 6 W

CEILING SPEAKER

CSL-106 B

CSL-106 W
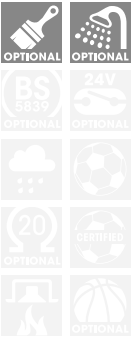
6W Adaptions 2 / 4 / 6 W

100 V

PASSIVE

ACTIVE

Developed to complement spot systems.

„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 2½″ 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.
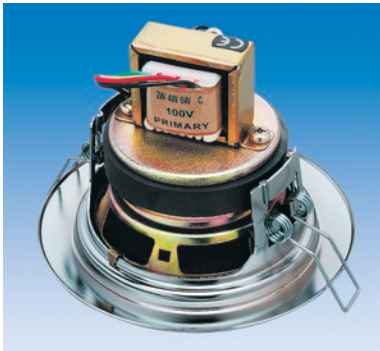
This picture shows the simple and time-saving assembly with 2 metal springs.

● The speaker is also available in a moisture proof version, an especially prepared chassis and matching transformer. Please order "FI-100" for this option.

★
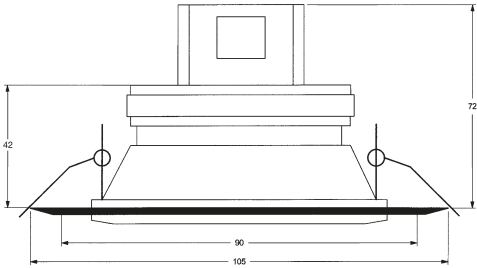
The necessary hole cut should have a Ø of 90 mm ± 3 mm.

Technical data	CSL-106 W / B
Load rating (Music power)	6 W (10W)
Transformer tappings at 100 V	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

Model designations

Spot-Design-**Ceiling Speaker,** white............ **CSL-106 W**
with 100 V-transformer, 6 W

Spot-Design-**Ceiling Speaker,** black.............. **CSL-106 B**
with 100 V-transformer, 6 W

WALL AND CEILING SPEAKER

100V

PASSIVE

ACTIVE

40W Adaptions 10/20/40W

2-Way-System

> **With swiveling „eyeball tweeter"**
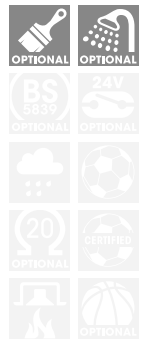
Description

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 (theft save).

● 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-400 WT is suitable for high rooms with a medium disturbance level.

● The installation case EZ-400 greatly improves the resonance.

★

270.0
79.0
13.0
91.0
305.0
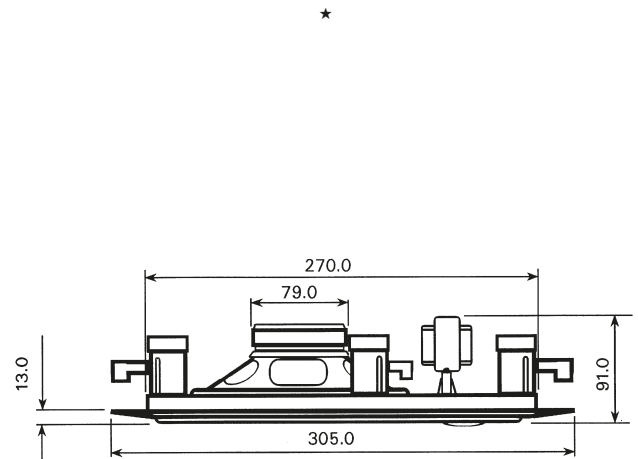
Neccessary hole cut: 275 mm x 190 mm, ± 5 mm.

Installation case made of soaked chipboard for fitting the SC-400 WT into ceilings, brick walls, concrete, etc.
Dimensions: 315 (H) x 233 (W) x 86 (D) in mm

Installation Case for SC-400 WT .. **EZ-400**

Technical data	SC-400 WT
Load rating (Music power)	40 W (60 W)
Transformer tappings at 100 V	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 100 V-transformer, with „eyeball-tweeter"

WALL AND CEILING SPEAKER

R·C·S

| in 3 power classes 4 W - 6 W - 10 W | square | square | in 3 power classes 10 W - 20 W - 30 W |
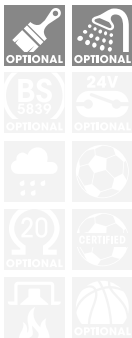
Description

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 theft save and impact resistant.

- Modern, understated design with a rim of approx. 2 mm.
- A high-quality wide band 5¼˝ chassis is used with an integrated high tone cone.

Description

The models SC-110 C and SC-120 C are identical to the model described, on the opposite side.

This model series has a very high-quality 2-way co-axial chassis. A separate twee-ter is integrated into the very wide band lined basic membrane. This coaxial speaker case ensures professi-onal sound pressure and sound repro-duction. Maximum capacity is 40 W.

with professioal 2-way coaxial chassis

Technical data	SC-104	SC-106	SC-110
Load rating (Music power)	4 (6) W	6 (15) W	10 (15) W
Transformer tappings at 100 V	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

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 tappings at 100 V	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 145 mm.
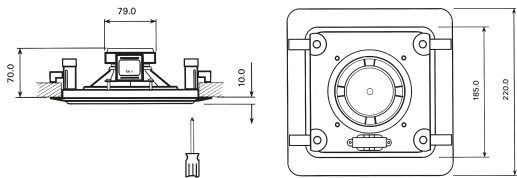
The square cut for the installation should have a side length of 185 mm.

Ceiling Speaker, 4 W with 100 V-transformer, white **SC-104**
Ceiling Speaker, 6 W with 100 V-transformer, white **SC-106**
Ceiling Speaker, 10 W with 100 V-transformer, white **SC-110**

Ceiling Speaker, 10 W 100 V, white, coaxial chassis . . . . . . **SC-110 C**
Ceiling Speaker, 20 W 100 V, white, coaxial chassis . . . . . . **SC-120 C**
Ceiling Speaker, 30 W 100 V, white, coaxial chassis . . . . . . **SC-130 C**

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**

Installation case made of soaked chip-board, fits the speakers SC-110 C and SC-120 C for installation in ceilings or walls made of bricks, cement etc.
Dimensions in mm: 233 (H) x 233 (W) x 85 (D)

Installation Case for SC-110/120/130 **EZ-120**

in 3 power classes
4 W - 6 W - 10 W

MADE IN GERMANY

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**

in 3 power classes
4 W - 6 W - 10 W

20 OPTIONAL
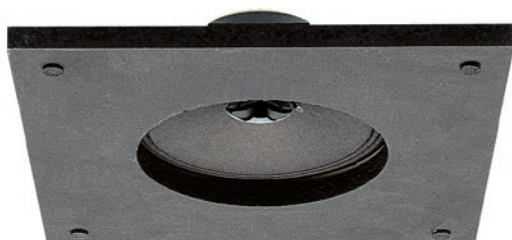
Sound Panel Speaker,   4 W, with 100V-transformer **SW-104**
Sound Panel Speaker,   6 W, with 100V-transformer **SW-106**
Sound Panel Speaker, 10 W, with 100V-transformer **SW-110**

in 3 power classes
10 W - 20 W - 30 W

with professioal
2-way coaxial chassis

Sound Panel Speaker, 10 W, with 100V-transformer . . . . . **SW-210 C**
Sound Panel Speaker, 20 W, with 100V-transformer . . . . . **SW-220 C**
Sound Panel Speaker, 30 W, with 100V-transformer . . . . . **SW-230 C**

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 ban-ded basic membrane, into which a separate tweeter is fitted, is used for the models SW-210 C, SW-220 C and SW-230 C.

- The sound panel has 4 rubber naps on the bottom side. This enables for instance a vibration- or boom distur-bance-free application on ceiling grills.

Figure shows model SW-106
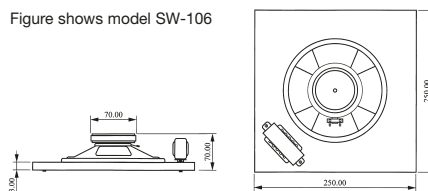
Technical data	SW-004	SW-006	SW-010
Load rating (Music power)	4 (15) W	6 (15) W	10 (15) W
Transformer tappings at 100 V	4 / 2 / 1 W	6 / 3 / 1,5 W	10 / 5 / 2,5 W
Frequency range	110 – 16.000 Hz	110 – 17.000 Hz	90 – 20.000 Hz
Sound pressure at 1W/1m	94 dB	94 dB	94 dB
Sound pressure SPL Pmax/1m	101 dB @4kHz	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 tappings at 100 V	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-210 C	SW-220 C	SW-230 C
Load rating (Music power)	10 (40) W	20 (40) W	30 (40) W
Transformer tappings at 100 V	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

BASS REFLEX CEILING SPEAKER

RCS

with professioal
2-way coaxial chassis

30W Adaptions 7,5 / 15 / 30 W
60W Adaptions 15 / 30 / 60 W
2-Way-System

100 V
PASSIVE
ACTIVE

„Sound-Dome"
Mounting speaker
with 100 V-transformer,
outstanding sound quality and performance

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

150 mm

213 mm

The hole cut-out should have: Ø 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 tappings at 100 V	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 Ø in mm and Impedance	Ø 105 mm (16 ohms)
Dimensions Ø 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 100 V-transformer and 16 ohms, white

---

sine 60 W

190 mm

250 mm

The hole cut-out should have: Ø 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 tappings at 100 V	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 Ø in mm and Impedance	Ø 160 mm (16 ohms)
Dimensions Ø 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 100 V-transformer and 16 ohms, white

RCS

CEILING SPEAKER

6W	Adaptions 1,5 / 3 / 6 W
10W	Adaptions 2,5 / 5 / 10 W
broadband chassis	

10W	Adaptions 2,5 / 5 / 10 W
20W	Adaptions 5 / 10 / 20 W
with coaxial chassis	
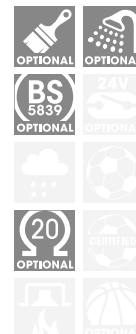
Description

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 re-production.
- Simple assembling.
- Optionally in humid room version available.

★

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.
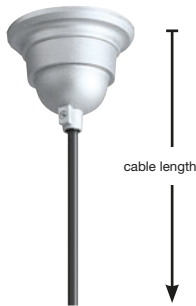
★
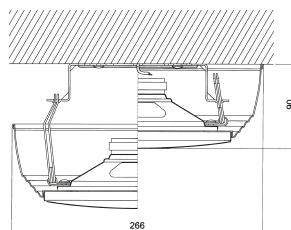
Figure shows 2-way-coaxial-chassis for the models SCS-110C and SCS-120C.

Technical data	SCS-106	SCS-110
Load rating (Music power)	6 (15) W	10 (15) W
Transformer tappings at 100 V	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

Technical data	SCS-110C	SCS-120C
Load rating (Music power)	10 (40) W	20 (40) W
Transformer tappings at 100 V	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, 6 W **SCS-106**
with 100 V-transformer, white

Ceiling Speaker, 10 W **SCS-110**
with 100 V-transformer, white

Ceiling Speaker, 10 W . . . . **SCS-110 C**
with 100 V-transformer, white

Ceiling Speaker, 20 W . . . . **SCS-120 C**
with 100 V-transformer, white

SOUND PROJECTORS WIDE RANGE SPEAKER

R·C·S

Also suitable for outdoor installation.

Description

These high-quality sound projectors have been developed according to the latest knowledge in plastic technology. The sound pressure decrees 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 tappings 100 V, 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.

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.

★
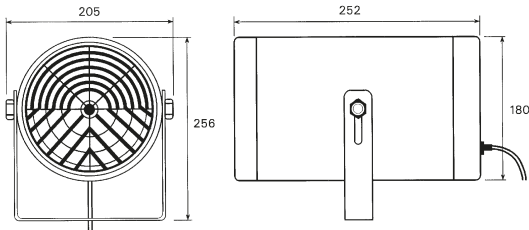
Technical data	CSP-220
Load rating (Music power)	20 W (35 W)
Transformer tappings at 100 V	20 / 10 / 5 W (also 70 V and 50 V)
Frequency range	100 – 20.000 Hz
Sound pressure at 1W/1m	95 dB
Sound pressure SPL Pmax/1m	109 dB
Speaker Ø and Nominal impedance	6,5″, 8 ohms
Protection type	IP 44
Dimensions (without bracket)	180 x 252 mm
Weight, Colour	approx. 2,2 kg, white, similar RAL 9010

Sound Projector, 20 W with 100 V-transformer **CSP-220**

RCS

100V

PASSIVE

ACTIVE

20W Adaptions 5 / 10 / 20 W
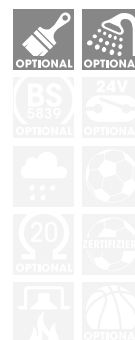
Description

The ball speakers KL-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 100 V 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 theft save. The speaker suspension can be adjusted up to 5m.

★

at 100V:
1/1 (orange)
1/2 (gray)
1/4 (white)
com (black)

ceiling canopy

5 m max.
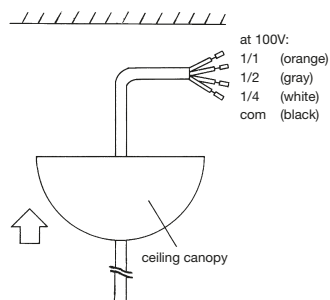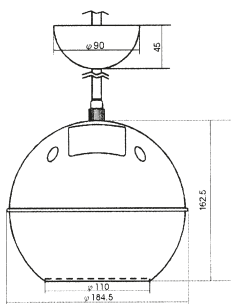
Supplied with: connection cable 5 m, ceiling canopy.
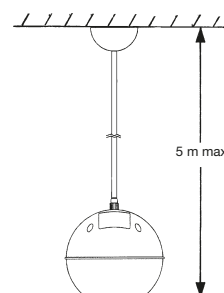
Technical data	KL-520
Load rating (Music power)	20 W (30 W)
Transformer tappings at 100 V	20 / 10 / 5 W
Frequency range	140 – 14.500 Hz
Sound pressure at 1W/1m	95,5 dB
Sound pressure SPL Pmax/1m	109 dB @1,5kHz
Angle of refl. beam (-6dB) 1/4/8 kHz	180°/ 50°/ 30°
Speaker Ø (mm) and Impedance	125 mm / 8 ohms
Dimensions Ø x H (mm)	184,5 x 162,5 mm
Weight, Colour	approx. 1,8 kg, white

Model designation

Ball Speaker, 20 W **KL-520**
white, with 100 V-transformer

2-WAY BALL SPEAKERS
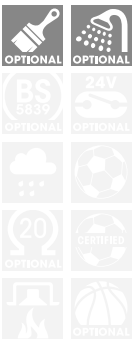
20W Adaptions 5 / 10 / 20 W

2-Way-System

100 V

PASSIVE

ACTIVE

with professioal
2-way coaxial chassis

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.

● The fitted high-quality 100 V, 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.

★

cable length

with professional 2-way-coaxial-chassis

Technical data	KLC-200 W / S
Load rating (Music power)	20 (30) W
Transformer tappings at 100 V	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 100 V-transformer, 20 W

Ball Speaker, black. . . . . **KL-200 S**
with 100 V-transformer, 20 W

RCS

(ALUMINIUM) COLUMN SPEAKERS

in 3 power classes
10 / 30 / 60 W
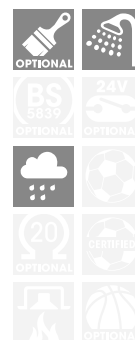
LA-160 (60/90 W)   **LA-140** (40/60 W)   **LA-130** (30/45 W)

> For indoor and outdoor mounting

The lobe-shaped sound dispersion characteristic enables excellent coverage of large areas with a relatively small number of column speakers.

Cast aluminium cover

Inside thread 1'/."

Fixing screws

Aluminium grille

Extruded aluminium cabinet

,Connecting cable (3-pin)
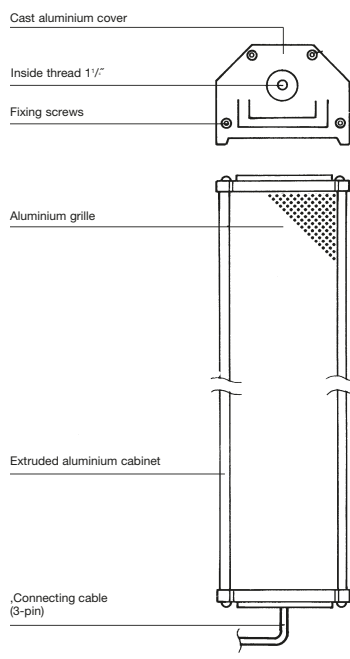
Description

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-130	LA-140	LA-160
Load rating (Music power)	30 W (45 W)	40 W (60 W)	60 W (90 W)
Transformer tappings at 100V	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
Sound pressure SPL Pmax/1m	113 dB	116 dB	118 dB
Speaker, installed	3 units	4 units	6 units
Dimensions, HxWxD (mm)	385 x 147 x 110 mm	575 x 147 x 110 mm	830 x 147 x 110 mm
Weight	approx. 4,5 kg	5,5 kg	6,0 kg
Colour	silver met./black		

Model designations

Column Speakers, 30 W, (100 V), aluminium **LA-130**

Column Speakers, 40 W, (100 V), aluminium **LA-140**

Column Speakers, 60 W, (100 V), aluminium **LA-160**

2-WAY COLUMN SPEAKERS

RCS

60 W (90 W)

40 W (60 W)

30 W (45 W)

20 W (30 W)

| LS-320 W | LS-330 W | LS-340 W | LS-360 W |

Tweeter

Broadband chassis

Wall bracket
can be swiveled and tilted
(included in delivery)

M8 thread floor stand
/ Mounting Kit adapter
for wall mounting the
speaker.)

Bottom / Cover
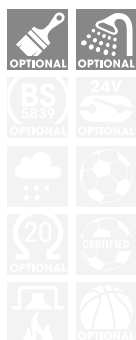
Description

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 speakersin this series are equipped with a 100 V 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.
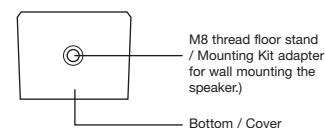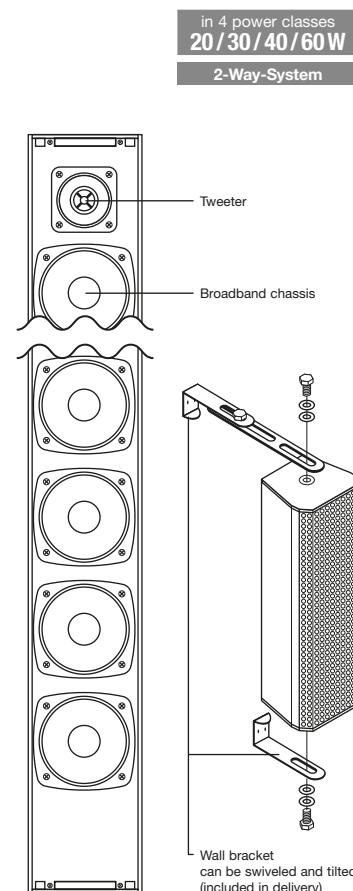
With the wall bracket included in the scope of delivery, the loudspeaker column can be swiveled as well as tilted.

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			

Model designations

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**

RCS

100V

PASSIVE

ACTIVE

12W Adaptions 1,5/3/6/12W

OPTIONAL
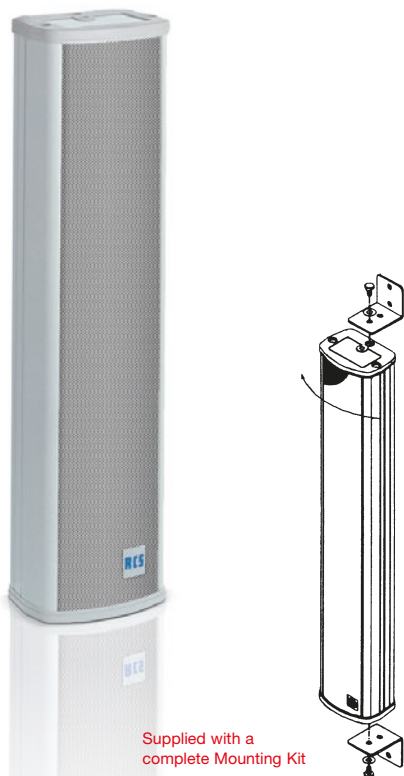
Supplied with a complete Mounting Kit

SPRACHE & MUSIK

30W Adaptions 7,5/15/30W

2-Way-System

max. 50W

OPTIONAL

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 perfomance.

★

Description

The 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	CS-212
Load rating (Music power)	12 W (18 W)
Transformer tappings at 100 V	12 – 6 / 3 / 1,5 W
Frequency range	100 – 15.000 Hz
Sound pressure at 1W/1m	92 dB
Sound pressure SPL Pmax/1m	103 dB
Speakers, installed	4 units Ø 70 mm
Dimensions (HxWxD)	405 x 106 x 75 mm
Weight	approx. 2,2 kg
Colour	similar RAL 9010

Technical data	DMH-301
Load rating (Music power)	30 W (45 W)
Nominal impedance	8 Ohm
Transformer tappings at 100 V	30 W – 15 W – 7,5 W
Frequency range	240 – 11.500 Hz
Sound pressure at 1W/1m	101 dB
Sound pressure SPL Pmax/1m	120,8 dB @ 5340 Hz
Angle of refl. beam (-6dB, 1/2/8 kHz)	60°/50°/30°
Pretection type DIN 40050	IP 66
Dimensions (H x B x T)	330 x 412 x 445 mm (without mounting bar)
Gewicht	approx. 5,7 kg
Material, Colour	ABS plastic, light gray

Column Speaker, 12 W (100 V), aluminium **CS-212**

Music Horn, 30 W, (100V), 2-way-sSystem **DMH-301**

HORN SPEAKERS (with 100 V-transformer)

15W 1,9/3,75/7,5/15 W Adaptions

OPTIONAL

20 Ω

Description

The horn speaker DH-115 A 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-115 A 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 100 V adaptions and a low-impedance adaptation can be selected.

The base impedance of the DH-115 A is 16 ohms. With this feature, this horn speaker is in addition to the usual 100 V 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 100 V operation available.

★

Technical data	DH-115 A
Load rating	20/15 W
Impedance	16 ohms
Adaptions at 100 V	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	gray, plastic
Dimensions	Ø 206 x L 272 mm

Horn Speaker, 15 W . . . . **DH-115 A**
with 100V-transformer

MH-001

MH-002
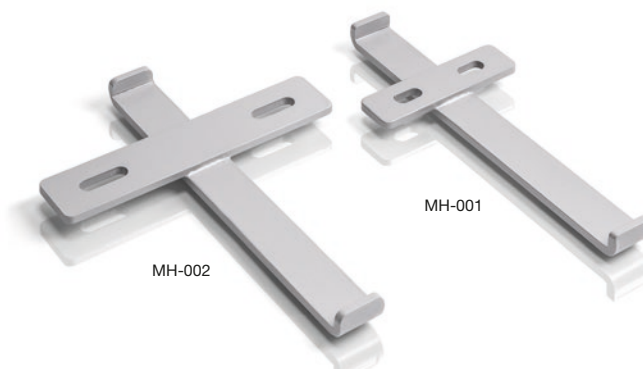
Description

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.

★

TYP I   TYP II
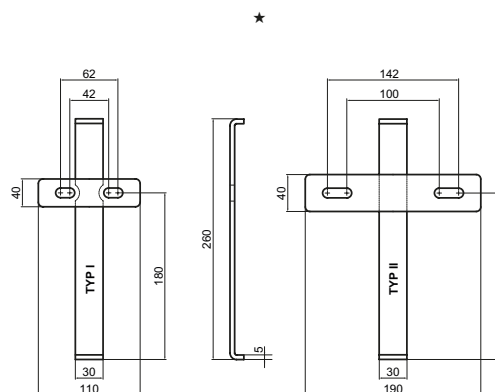
In the following table you will find the matching mast holder model for the respective speaker types:

Speaker	Hole spacing	Screw	Type	Model
CS-6HT60 BS	140	M10	II	**MH-002**
CSP-115	102	M10	II	**MH-002**
CSP-220	100	M10	II	**MH-002**
DH-110 S	50	M8	I	**MH-001**
DH-115	50	M8	I	**MH-001**
DH-115 A	60	M8	I	**MH-001**
DH-130	50	M8	I	**MH-001**
DH-130 F	105	M8	II	**MH-002**
DH-135 HD	60	M8	I	**MH-001**
DH-150 HD	77	M8	I	**MH-001**
DMH-301	140	M10	II	**MH-002**
PHS-81-T30 BS	60	M6	I	**MH-001**
SPJ-53 WHBS	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

10W Adaptions 1/3/5/10 W

OPTIONAL

Horn Speaker, with 100V-transformer . . . . **DH-110 S**

15W Adaptions 3/5/10/15 W

OPTIONAL

Horn Speaker, with 100V-transformer . . . . **DH-115 S**

30W Adaptions 3/5/10/15/30 W

OPTIONAL

Horn Speaker, with 100V-transformer . . . . **DH-130 S**

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-gray 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.

★

Impedance switch
PG - screwing
Connecting cable 5 m (3-pin)
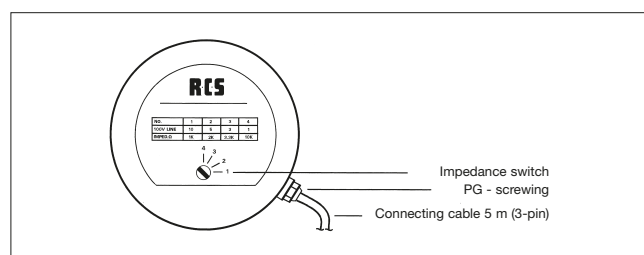
Technical data	DH-110 S	DH-115 S	DH-130 S
Load rating	15/10 W	25/15 W	40/30 W
Nominal impedance	8 ohms	8 ohms	8 ohms
Transformer tappings at 100 V	10 / 5 / 3 / 1 W	15 / 10 / 5 / 3 W	30/15/10/5/3 W
SPL at 1 W/ 1m	103 dB	105 dB	107 dB
SPL Pmax/1m	113 dB@1574Hz	117 dB@1130Hz	123 dB@1409Hz
Frequency range	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	gray, plastic		
Dimensions, HxWxL (mm)	150 x 175 x 180	180 x 225 x 230	220 x 290 x 265

HORN SPEAKERS (with 100 V-transformer)

35W Adaptions 25/35 W
Heavy Duty

OPTIONAL

50W Adaptions 35/50 W
Heavy Duty

100 V

PASSIVE

ACTIVE

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 professionality 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 water-proof.
- 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.

★

Cabinet with built-in transformer

Connecting cable 0,5 m (3-pin)

Mounting bracket, reversible

Technical data	DH-135 HD	DH-150 HD
Load rating	50/35 W	60/50 W
Nominal impedance	8 ohms	8 ohms
Transformer tappings at 100 V	35 – 25 W	50 – 35 W
SPL at 1 W/1 m	109 dB	110 dB
SPL Pmax/1m	125 dB	126 dB
Frequency range	200 – 6.500 Hz	200 – 6.500 Hz
Protection type	IP 66	
Weight	approx. 3,0 kg	approx. 3,5 kg
Colour and Material	black, plastic/Alu	
Dimensions, HxWxL (mm)	Ø 280 x L 300	Ø 340 x L 360

Model designations

Horn Speaker, 35 W . . . . **DH-135 HD**
with 100 V-transformer

Horn Speaker, 50 W . . . . **DH-150 HD**
with 100 V-transformer

RCS

2-Way-System

Rear view
active speaker
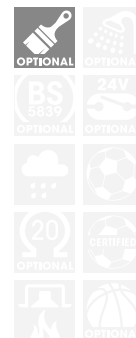
Description

This universally usable active loudspeaker system is especially well suited for multimedia applications, monitoring, conference rooms, educational institutions and similar areas.

One PBA-040 W 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.
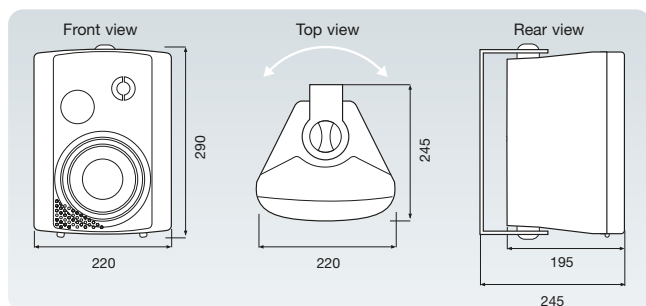
- Swivel mounting bracket and trapezoidal box shape allow versatile mounting in horizontal or vertical orientation on walls or under the ceiling.

★

Technical data	PBA-040 W
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; "ON" LED rear side; Signal LED for L and R on rear side
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 ×220 ×245 mm
Weight (kg), Colour	10,1 kg (pair); white

Front view — 220, 290
Top view — 220
Rear view — 245, 195

Model designation

Active-Speaker-System, 2x 25 W ....**PBA-040 W**
Stereo speaker incl. mounting bracket

ACTIVE CEILING SPEAKER SYSTEM

MADE IN GERMANY
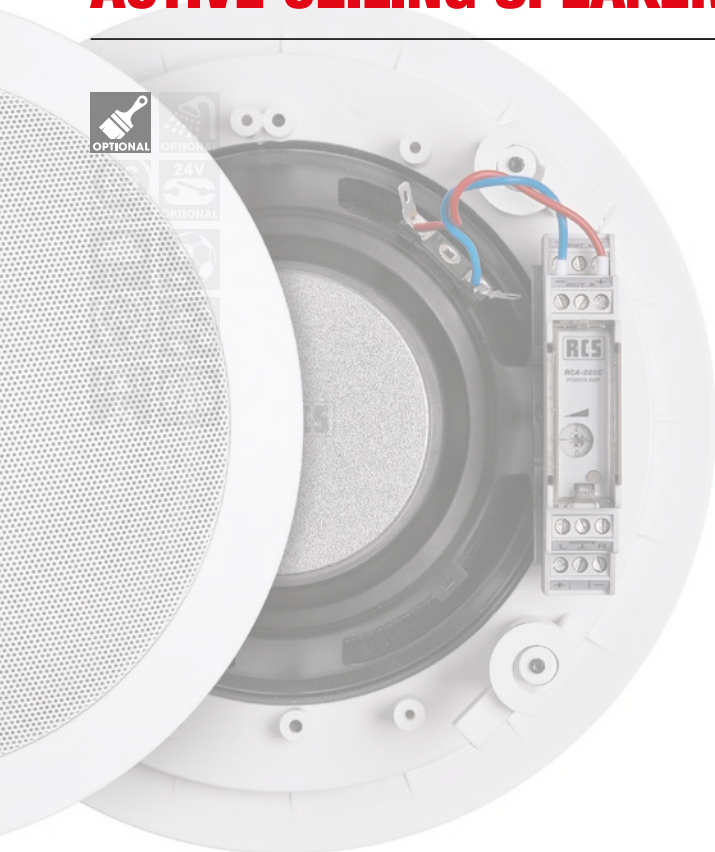
2-Way-System
with coaxial chassis

100 V

PASSIVE
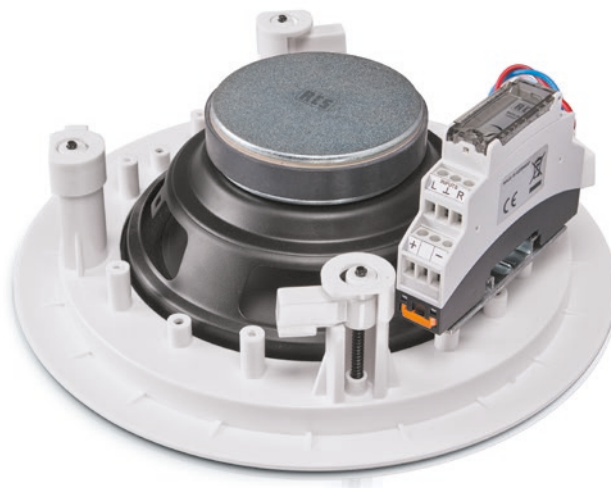
ACTIVE

Description

The new active speaker system RCA-220 C 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-121 A 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.

★

Operating principle of the system

24V power supply — Flush mounted Mixer

Audio source

RCA-220 C SET
1 amplifier module provides 2 speakers

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 mm²
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, 24 V **PSU-048/24**

VOLUME CONTROL AND SELECTOR SWITCHES

Control-program combination
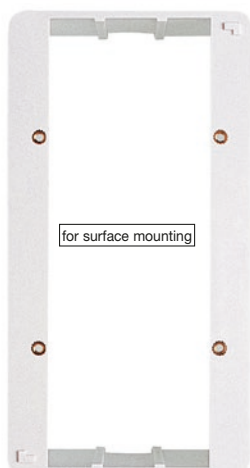
Surface mount socket EG-200

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 fit in 2 cavity wall sockets (orange).

★

Rear and Front view of the Control-program combination
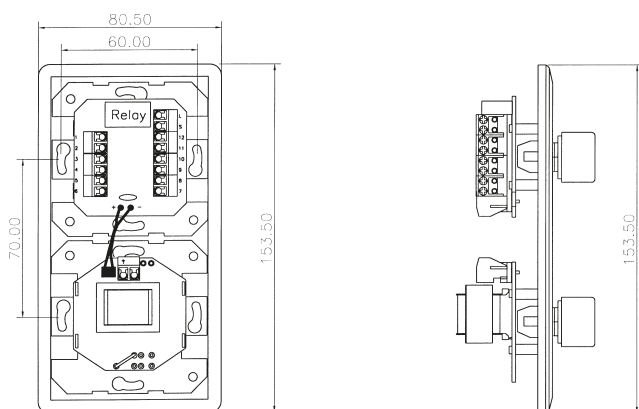
Model designations

Control-Program-Combination, up to 50 W . . . . . **LPW-150 R**
alpine white with relay

The surface mount socket EG-200 (plastic) is made for flush-mounting installation of the control-program combination.

Mounting Case, 2-fold (flush-mounting, plastic) **EG-200**

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 60mm 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.

- Attenuation in 10 steps.
- Audio transformer for 100V transmission technology.
- Flush mounting, surface mounting with suitable, optionally available mounting case EG-101.

Model designations

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**

The surface mount socket EG-101 (plastic) is made for flush-mounting installation of the control-program combination.

Mounting Case , 1-fold (flush-mounting, plastic). **EG-101**

Volume-Control (mono)

These mono loudspeaker level controls (volume controls) are used to adjust the volume of loudspeakers on low-impedance use. They are especially suitable for the mounting in cabinet speakers etc.

LRM-015 (15 W)
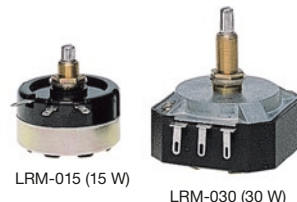
LRM-030 (30 W)

LRM-015:
15 W, Imp. 4 – 8 Ohm (± 25 %), Regelbereich 0 – 40 dB, Achs-Ø 6 mm, Gehäuse Ø 41 x (H) 24 mm
LRM-030:
30 W, Imp. 4 – 8 Ohm (± 25 %), Regelbereich 0 – 40 dB, Achs-Ø 6 mm, Gehäuse Ø 50 x 50 x 28 mm

Model designations

Volume-Control, 15 W **LRM-015**
Volume-Control, 30 W **LRM-030**

INDOOR-SPEAKER SERIES *Xorva ›S‹*

R·C·S

20W Adaptions 5/10/20W

40W Adaptions 10/20/40W

100 V

PASSIVE

ACTIVE

OPTIONAL

OPTIONAL

BS 5839 OPTIONAL

Description

The **XORVA ›S‹** series is designed for indoor use. It offers two alternative models (passive or 100 V) 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.
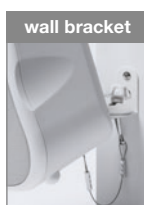
wall bracket

Please consider the following features:

● Available in 2 different versions (passive or 100 V).

● 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 4″ broadband chassis provides a nice and quiet sound with good speech audibility.

★

Technical data	XSS-020	XSS-020 T
Type	**PASSIVE**	**100 V**
Nominal load capacity (program)	20 (40) W	20 (40) W
Adjustments at 100 V	-	20 - 10 - 5 W
Inputs	Clamp L/R	
Impedance	6 ohms	6 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

Technical data	XSS-040 T
Type	**100 V**
Nominal load capacity (program)	40 (50) W
Adjustments at 100 V	40 - 20 - 10 W
Inputs	Clamp L/R
Impedance	6 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

Model designation

***Xorva ›S‹* Speaker, 20 W** **XSS-020**
passive speaker, 6 ohms, with mounting bracket

***Xorva ›S‹* Speaker, 20 W** . . . . **XSS-020 T**
with 100 V-transformer, with mounting bracket

Model designation

***Xorva ›S‹* Speaker, 40 W** . . . . **XSS-040 T**
with 100 V-transformer, with mounting bracket

100 V PRO-SOUND SPEAKER

20W Adaptions 2,5/5/10/20 W
2-Way-System
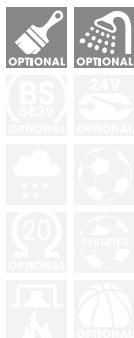
30W Adaptions 5/10/15/30 W
2-Way-System

PB-720 W   PB-720 S

PB-730 W   PB-730 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.

● 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 100 V and an 1 x 8 ohms position. A built-in high quality 100 V 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

Dome-Tweeter

Fullrange-Woofer

Stands, for desk storing, etc.

Front view

Figure shows PB-720 and PB-730

Suspension eye (only PB-720W/S)

Terminal clamp, 2-pin

Impedance selector

Mounting bracket with holes

Rear view
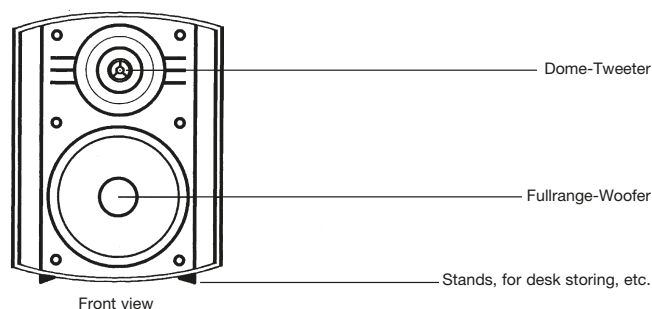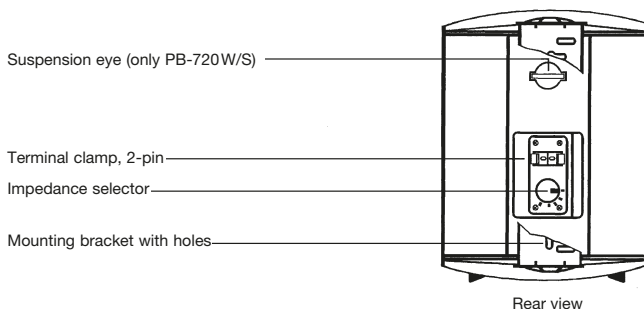
Technical data	PB-720 S / PB-720 W
Load rating (Music power)	20 W (50 W)
Transformer tappings at 100 V	20 – 10 / 5 / 2,5 W
Frequency range	170 – 20.000 Hz
Sound pressure at 1W/1m	90 dB
Sound pressure SPL Pmax/1m	103 dB @8kHz
Angle of refl. beam (-6dB) 1/4/8 kHz	150°/ 105°/ 100°
Speaker ø (mm) and impedance (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

Technical data	PB-730 S / PB-730 W
Load rating (Music power)	30 W (80 W)
Transformer tappings at 100 V	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, 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

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

100V PRO-SOUND SPEAKER

R·C·S

60W Adaptions 10/15/30/60W

2-Way-System

100V

PASSIVE

ACTIVE

PB-760W

PB-760S

PB-760S 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.

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 are only suitable for indoor installation.
- 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.

Mounting bracket with holes

Terminal clamp, 2-pin

Impedance selector

Stands, for desk storing, etc.

Rear view
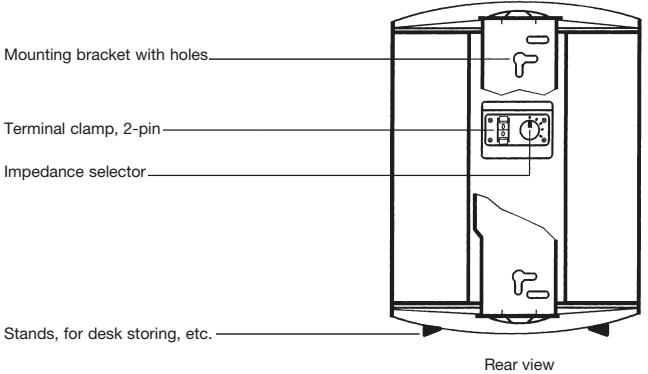
Technical data	PB-760S/PB-760W
Load rating (Music power)	60 W (150 W)
Transformer tappings at 100 V (in W)	60 – 30 – 15 – 10 W
Frequency range	88 – 18.000 Hz
Sound pressure at 1W/1m	92 dB
Sound pressure SPL Pmax/1m	110 dB @1kHz
Angle of refl. beam (-6dB) 1/4/8 kHz	120° / 145°/ 115°
Speaker Ø (mm) and 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

--- 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.
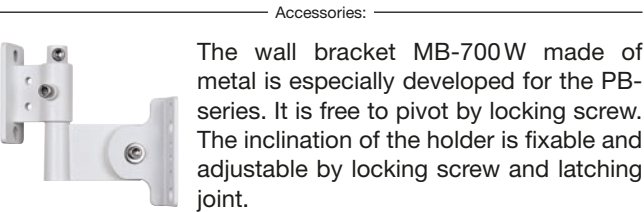
Wall Bracket, white **MB-700W**
for PB-730W/S and PB-760W/S

Pro-Sound Speaker, 60 W black **PB-760S**
with 100V matching transformer (60 – 30 – 15 – 10 W) and 8 ohms

Pro-Sound Speaker, 60 W white **PB-760W**
with 100V matching transformer (60 – 30 – 15 – 10 W) and 8 ohms

193

RCS

100 V PRO-SOUND SPEAKER

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-1210 S/W	PB-1220 S/W	PRO-800	PRO-1200 S/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 tappings 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

R·C·S
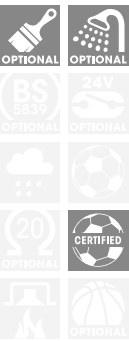
in 3 power classes
60 / 100 / 200 W
2-Way-System

100 V

PASSIVE

ACTIVE

OPTIONAL OPTIONAL

BS 5839 OPTIONAL   24V OPTIONAL

20 OPTIONAL   CERTIFIED

OPTIONAL

QST -185
(Flor stand PB-1210/1220
or PRO-1200)

PST -100
(Flor stand PB-806/810
or PRO-800)

black or white
BALL-THROW-PROOF CERTIFIED
DIN 18 032-3

PB-1210/20 S
PRO-1200 S

PB-1210/20 W
PRO-1200 W

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-1200 S** = black   **PRO-1200 W** = 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

Description

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 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

+ ASSEMBLY

The housing of these loudspeakers consists of gray 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 10″ and respectively 12″-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 and QRF-212.

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.

Wall Bracket QWH-050

+ WALL BRACKET

The wall bracket QWH-050 can be tilted 0-22° in 11° steps and is suitable for types QRF-210 and QRF-212.

Technical data	QRF-210	QRF-212
Type of speaker	2-way fullrange	2-way fullrange
Nominal capacity/ performance	220 W (RMS), 350 W (MAX)	250 W (RMS), 400 W (MAX)
Bass-Speaker	1x 10"	1x 12"
Horn-Speaker	1x 1,3"	1x 1,3"
Stand hole	yes	yes
Sound pressure 1W/1m	96 dB SPL	96 dB SPL
Sound pressure SPL MAX	122 dB SPL	123 dB SPL
Frequency (±3 dB)	53 ~ 20.000 Hz	50 ~ 20.000 Hz
Impedance (nominal)	8 ohms	8 ohms
LS-Connectors	2 x Speaker	2 x Speaker
Corresponding radiation	120° x 60°	120° x 60°
Dimensions (H x W x D)	574 x 390 x 375 mm	614 x 418 x 375 mm
Weight, Colour	22 kg, gray	25 kg, gray

QRF-SERIES SPEAKER-SYSTEMS

PROFESSIONAL SPEAKER-SYSTEMS

R·C·S
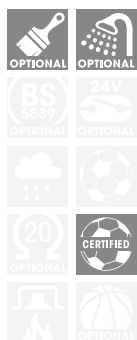
in 2 power classes
220 / 250 W
2-Way-System

100 V

PASSIVE

ACTIVE

QRF-212

QRF-210

QWH-050

QST-185

QRF-212

QRF-212

QRF-210

Model designations

Pro-Sound Speaker, 220 W........................**QRF-210**
2-way-system with 10″ bass woofer and 1,3″ horn

——————————— Accessories: ———————————

Wall Bracket, only for QRF-210 and QRF-212 ....**QWH-050**

Eyebolts-Set, consists of 5 pieces eyebolts **QRK-005**

Pro-Sound Speaker, 250 W........................**QRF-212**
2-way-system with 12″ bass woofer and 1,3″ Horn

——————————— Accessories: ———————————

Speaker-Stand, up to 1,85 m hight.............**QST-185**

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R·C·S

100 V

PASSIVE

ACTIVE

Description

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 installation area (for example, in sports and multi-purpose halls, theme restaurants, smaller stadiums and theatres, etc.)

+ HIGHLIGHTS

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:

- 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)	20 - 220 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 (H x V)	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-SERIES 200 SPEAKER-SYSTEMS

PROFESSIONAL FIX INSTALL SPEAKER-SYSTEMS

RCS

MADE IN GERMANY

in 2 power classes
100 V: 100 / 200 W

in 2 power classes
passive: 350 / 500 W

2-Way-System

**BALL-THROW-PROOF CERTIFIED
DIN 18 032-3**

OPTIONAL OPTIONAL

BS 5839 OPTIONAL | 24V OPTIONAL

CERTIFIED

OPTIONAL

MADE BY
H.M.E
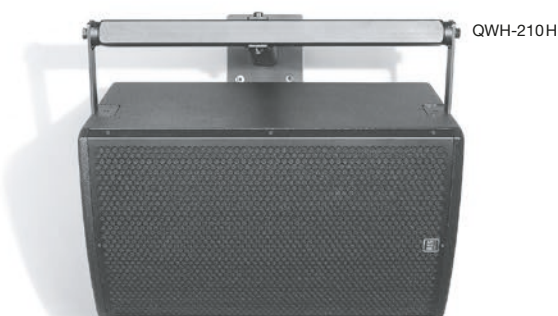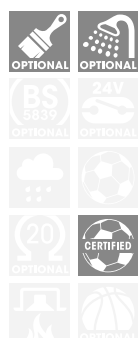
QWH-210H

QWH-210V

100 V

PASSIVE

ACTIVE

15″

12″

10″

QRI-215/T

QRI-212/T

QRI-210/T

QRI-108 S/ST, Subwoofer
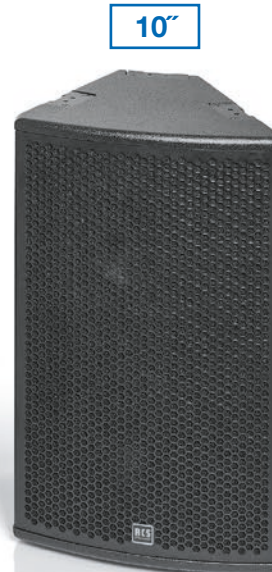
Model designations

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-108 S**
Subwoofer (passiv) with 8″ Bass-Woofer

— Accessories: —

Multimount-Holder, for QRI-210/T, vertical . . . . **QWH-210 V**

Multimount-Holder, for QRI-212/T, vertical . . . . **QWH-212 V**

Multimount-Holder, for QRI-215/T, vertical . . . . **QWH-215 V**

Pro-Sound-Speaker, 100 W, with 100 V-transformer . . .**QRI-210 T**
2-way-system with 10″ Bass-Woofer and 1″ Horn

Pro-Sound-Speaker, 200 W, with 100 V-transformer . . .**QRI-212 T**
2-way-system with 12″ Bass-Woofer and 1″ Horn

Pro-Sound-Speaker, 200 W, with 100 V-transformer . . .**QRI-215 T**
2-way-system with 15″ Bass-Woofer and 1″ Horn

Pro-Sound-Speaker, 100 W, with 100 V-transformer .**QRI-108 ST**
Subwoofer (passiv) with 8″ Bass-Woofer

— Accessories: —

Multimount-Holder, for QRI-210/T, horizontal . . . . **QWH-210 H**

Multimount-Holder, for QRI-212/T, horizontal . . . . **QWH-212 H**

Multimount-Holder, for QRI-215/T, horizontal . . . . **QWH-215 H**

R·C·S

100 V

PASSIVE

ACTIVE

Description
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.).

+ HIGHLIGHTS

The QRI Series 400 consists of PA speakers, which are equally suitable for voice and music playback in conjunction with the QRI-108 S 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 equally suitable for both voice and music playback in conjunction with the QRI-108 S 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)
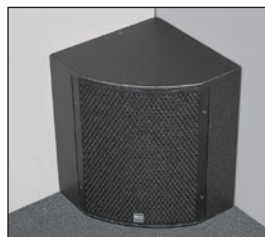
Subwooder QRI-108 S / ST optional available

- 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	100 V Fullrange	PASSIVE 2-way Fullrange	100 V 2-way Fullrange	PASSIVE 2,5-way Fullrange	100 V 2,5-way Fullrange	PASSIVE passive Subwoofer	100 V 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		20 - 220 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 (H x V)	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

R·C·S

OPTIONAL OPTIONAL

BS 5839 OPTIONAL | 24V OPTIONAL

CERTIFIED

MADE IN GERMANY
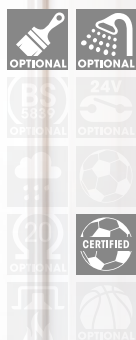
100 V

in 3 power classes
100 V: 30 / 60 / 100 W

in 3 power classes
passiv: 50/125/200 W

2.5-Wege-System

PASSIVE

ACTIVE

BALL-THROW-PROOF
CERTIFIED
DIN 18 032-3

MADE BY
H.M.E.

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-108 S**
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 100 V-transformer . . . . . **QRI-401 T**
with 4″ Broadband chassis, incl. L-bracket wall mount

Pro-Sound-Speaker, 60 W, with 100 V-transformer . . . . . **QRI-402 T**
2-way-system with 2x 4″ Broadband-Speaker and 1″ Dome

Pro-Sound-Speaker, 60 W, with 100 V-transformer . . . . . **QRI-404 T**
2,5-way System with 4x 4″ Broadband-Speaker and 1″ Dome

— Accessories: —

Pro-Sound-Speaker, 100 W, with 100 V-transformer . **QRI-108 ST**
Subwoofer (passive) with 8″ Bass-Woofer

Wall Mounting Bracket, (U-bracket) for QRI-404/T **QWH-404**

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BALL PROTECTION GRID FOR SPEAKERS

MADE IN GERMANY

BSG-280W

BSG-350W

BSG-260W
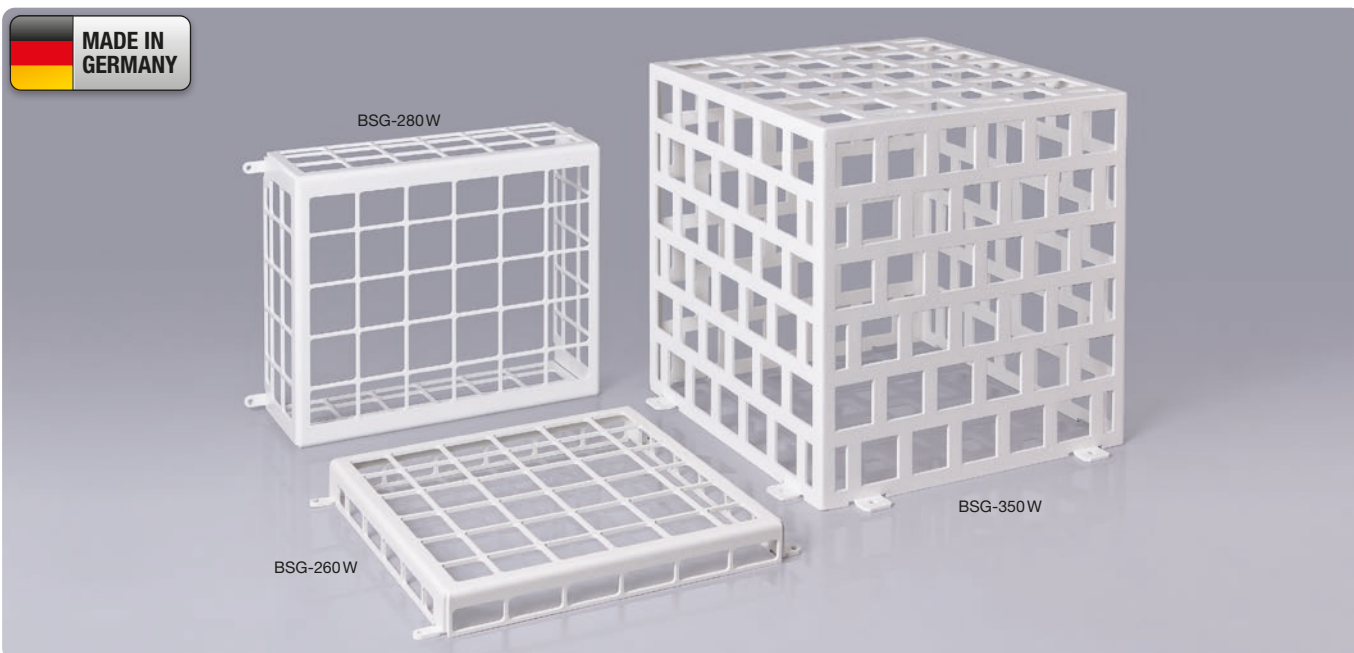
Description

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-350) 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.
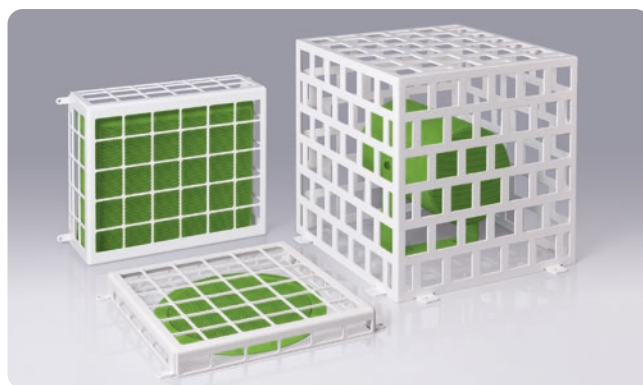
Technical data	BSG-260W	BSG-280W	BSG-350W
Dimensions (WxHxD)	263 x 263 x 27 mm	295 x 230 x 100 mm	350 x 350 x 350 mm
weight	0,9 kg	1,3 kg	6,4 kg
Colour / Material	white; metal		
Suitable speakers	all RCS-Ceiling- and Ceiling Speakers	BC-/BCH-Series	CSP-115/220 D, DH-110 S/115 S/130 S, BC-215 C/230 C, PHS-81T30 BS, SPJ-52 WHBS, SPJ-53 WHBS

Model designations

Ball protection grid, for Ceiling- and Ceiling Speaker, 263 x 263 x 27 mm (WxHxD), e.g. for RC-/SC-Series . . . .**BSG-260 W**

Ball protection grid, for Cabinet Speaker, 295 x 230 x 100 mm (WxHxD), e.g. for BC-Series . . . .**BSG-280 W**

Ball protection grid, for Horn- or Special Speaker, 350 x 350 x 350 mm (WxHxD), e.g. for DH-115 S. . . . .**BSG-350 W**

DIGITAL IMPEDANCE TESTER

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 (± 2%) through calibration
- Battery monitoring by display
- Protection and storage bag

LCD-Display (Indicator)

TEST: Start, Measurement On

Permanent measurement

Keep the display screen

Background illumination

Socket for measuring cables

LED display during active measurement

Rotary switch for range selection
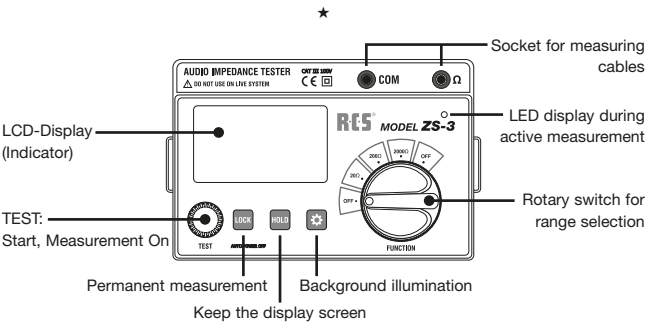
Technical data	ZS-3
Inputs	Banana plug
Measurement ranges	0-20 ohms, 0-200 ohms, 0-2000 ohms
Measurement accuracy	±2%
Test frequency	1 kHz
Power supply	6 x 1,5V AA battery
Dimensions and Weight	168x110x62 mm; 584g (incl. battery)

Model designation

Digital Impedance Tester, with accessories **ZS-3**

RCS

broadband, ideal for PA-systems **SPEAKER-CHASSIS**

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.

10W

10W

40W | 2-way chassis

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	70 x 32 x 10 mm
Height (installation depth)	45 mm

Speaker-Chassis . . . . **LC-510 T**
8 ohms

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	70 x 32 x 10 mm
Height (installation depth)	55 mm

Speaker-Chassis **LC-610**
8 ohms

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	100 x 60 x 15 mm
Height (installation depth)	68 mm

Speaker-Chassis . . . . **LC-640 CX**
8 ohms, 2-way system (Coaxial)

RCS

100V-MATCHING-TRANSFORMER

Connecting cable approx. 20 mm

„L" at the end of the model designation means:
With connecting cables.
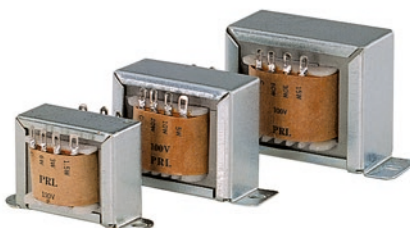
„S" at the end of the model designation means:
With solder lugs

Description

The presented 100V-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.

Model designations and Technical data:

Modell	Load rating	Primary 100 V	Secondary	Core	Weight	Dimensions mm (see sketch)				
						A	B	C	D	E
MT-040 L	4 W	4 – 2 – 1 W	8 ohms	41 x 14 mm	170 g	51	33	36	43	62
MT-061 L	6 W	6 – 3 – 1,5 W	8 ohms	41 x 14 mm	180 g	51	33	36	43	62
MT-101 L	10 W	10 – 5 – 2,5 W	8 ohms	41 x 14 mm	190 g	51	33	36	43	62
MT-150 S	15 W	15 – 7,5 – 3,9 – 1,8 W	4 - 8 ohms	48 x 20 mm	340 g	60	42	42	50	70
MT-200 L	20 W	20 – 10 – 5 W	8 ohms	48 x 20 mm	370 g	60	42	42	50	75
MT-310 L	30 W	30 – 15 – 7,5 W	4 – 8 – 16 ohms	48 x 25 mm	410 g	60	48	42	50	70
MT-600 S	60 W	60 – 30 – 15 W	4 – 8 ohms	57 x 25 mm	570 g	71	50	50	59	82

100 V-RING CORE TRANSFORMER

Note:
The picture can differ
from the product!

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 100 V-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.

★
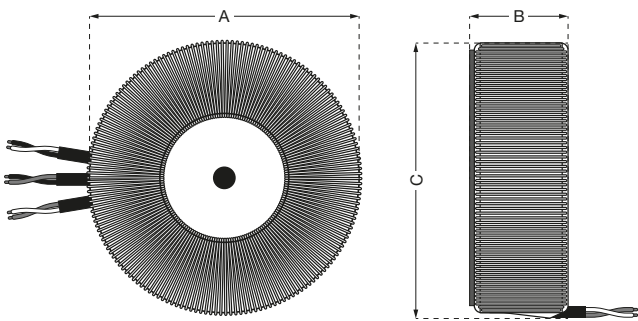
Modell	Dimensions (see drawing)		
	A	B	C
HP-101 R	92 mm	42 mm	96 mm
HP-201 R	112 mm	69 mm	115 mm

Technical data	HP-101 R	HP-201 R
Primary	100 V - 100 W	100 V - 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

100 V Ring Core Transformer (100 W) . . . . **HP-101 R**
100 V Ring Core Transformer (200 W) . . . . **HP-201 R**
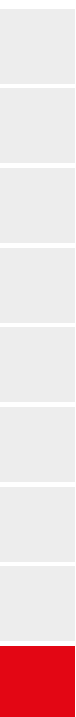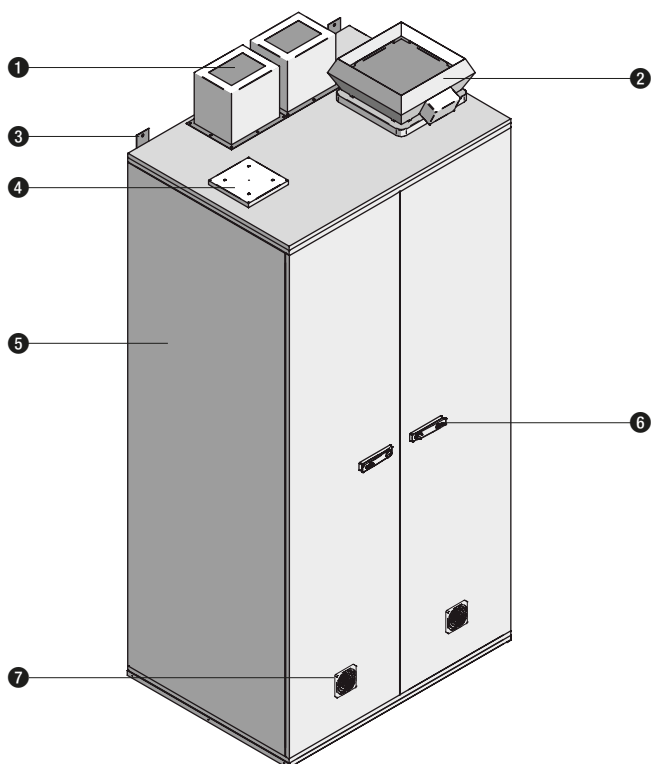
❶ 2x Cable inlet / cable outlet

❷ Active high-performance fan on VLS Ø 80mm ventilation system

❸ 2x mounting brackets

❹ cover plate on VLS Ø 80mm ventilation system

❺ Fire protection housing

❻ Swing lever door handle

❼ 2x Air inlet

1 RU = 44,45 mm (1¾").

H = overall height in mm
D = overall depth in mm
W = overall width in mm

h = useable height (inside) in mm
d = useable depth (inside) in mm
w = useable depth (inside) in mm

Model	H	W	D	h	w	d	Weight
BSS-9040 D	2483	1110	809	2050	900	700	594 kg
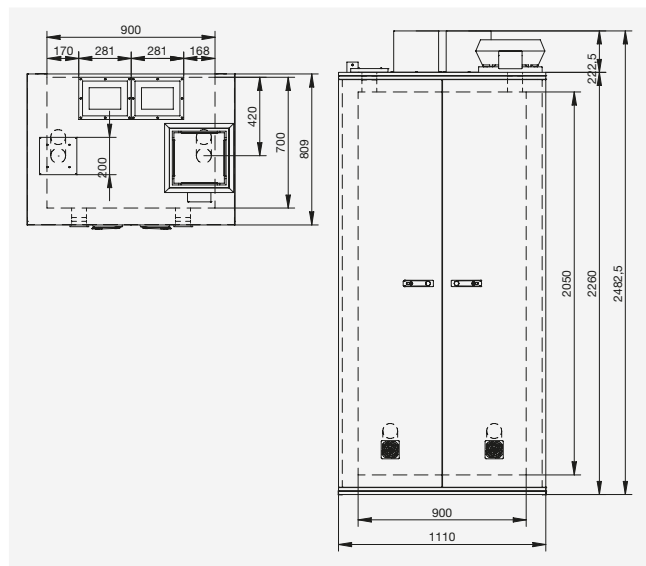
Description

The BSS-9040 D fire protection cabinet are used in all places where voice evacuation systems have to accomplish the demands of **E90** (functional endurance over 90 minutes in a case of fire) or **F90** (resistance against fire for 90 minutes). BSS series housings are approved by the German construction supervision agency and fulfill all recent safety regulations (approval number Z-86.1-28).

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 fire protection housing was specially developed for the swing frame cabinets RSS-5540 B. ue 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 90 minutes

● Complies with the demands of the recent MLAR (German regulation for high buildings)

● Fire resistant plates according to DIN 4102 A1/A2

● 90 minutes fire load dampening (I90)

● Protection class II (IP 54)

● Active high-performance fan on VLS Ø 80mm ventilation system

● Two cable inputs or outputs 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)

★

FIRE PROTECTION CABINET SERIES ›BSS‹

R·C·S

**TESTED AND APPROVED
BY MPA STUTTGART**

NEW

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BSS series in the fire test

Model designation

F90 Fire Protection Cabinet for RSS-5540 B, (40 RU)..**BSS-9040 D**

RCS

FIRE PROTECTION CABINET SERIES ›BSS‹
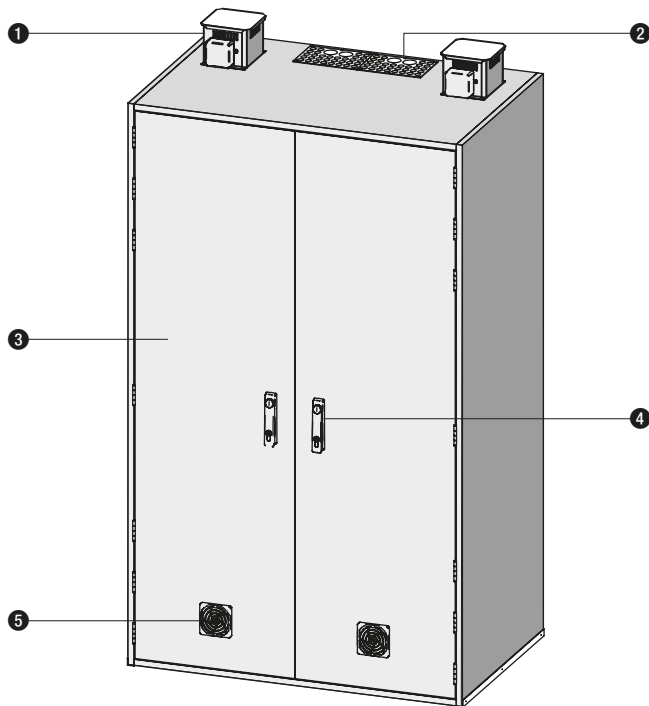
① Active cooling system
② Cable inlet / cable outlet
③ Fire protection housing
④ Swing lever door handle
⑤ Air inlet

1 RU = 44,45 mm (1¾″).

H = overall height in mm   h = useable height (inside) in mm
D = overall depth in mm   d = useable depth (inside) in mm
W = overall width in mm   w = useable depth (inside) 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
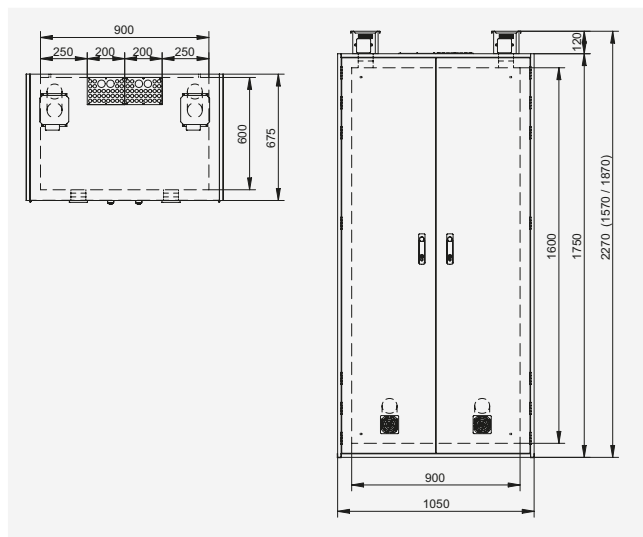
Description

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 B, RSS-5530 B, RSS-5540 B). 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)

★

FIRE PROTECTION CABINET SERIES ›BSS‹

R·C·S

TESTED AND APPROVED
BY MPA STUTTGART

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to the video:
BSS series in the fire test

Model designations

F30 Fire Protection Cabinet for RSS-5524 B, (24 RU)	**BSS-3024 C**
F30 Fire Protection Cabinet for RSS-5530 B, (30 RU)	**BSS-3030 C**
F30 Fire Protection Cabinet for RSS-5540 B, (40 RU)	**BSS-3040 C**
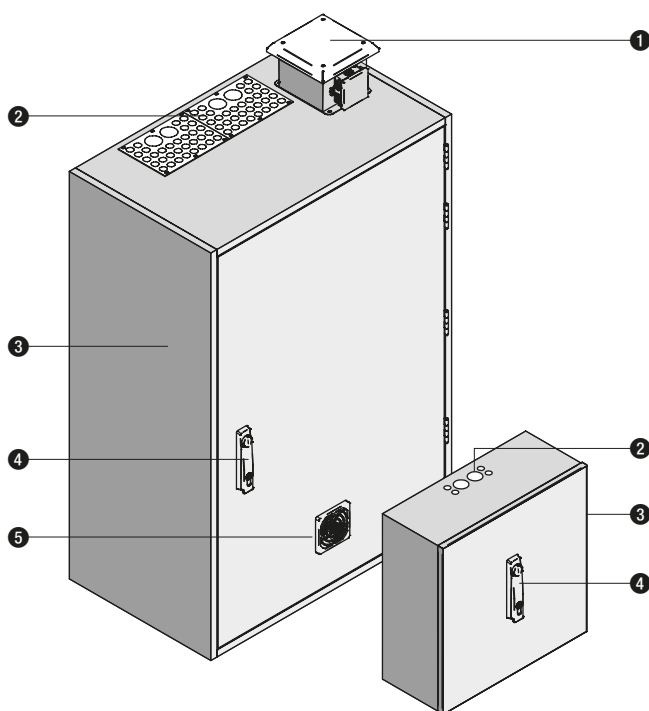
R·C·S   FIRE PROTECTION WALL-CABINET SERIES ›BSS‹

❶ Active cooling system
❷ Cable inlet / cable outlet
❸ Fire protection housing
❹ Swing lever door handle
❺ Air inlet

1 RU = 44,45 mm (1¾").

H = overall height in mm   h = useable height (inside) in mm
D = overall depth in mm   d = useable depth (inside) in mm
W = overall width in mm   w = useable depth (inside) in mm

Models	H	W	D	h	w	d	Weight
BSS-1500 A	1220	750	441	950	600	366	153 kg
BSS-300 A	514	514	218	400	400	140	32 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 VARES-System by MPA Stuttgart. The comprehensive test report can be requested if needed.

The fire protection housings were specially developed for our VARES-1500 and VARES series accessories.

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 Ø 80 mm fan (BSS-1500 A only)

● Two cable inputs in the top of the housing (or above/below at the BSS-300 A model)

● The BSS-1500 A housing has a door with steel hinges. The cover of the BSS-300 A is completely removable

● Upgrade with a special locking cylinder is possible

● Wall mounting kit included

● Colour RAL 7035 (light grey)

★

FIRE PROTECTION WALL-CABINET SERIES ›BSS‹

R·C·S

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NEW

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BSS series in the fire test

Model designations

19˝-SWING FRAME CABINETS ›RSS‹

① Lockable cylinder lock
② Stable 19˝ swing frame
③ Universal lock

④ RFF-300 (optional)
⑤ Brush strip for cable entry
⑥ 19˝ rackrail with ASA hole pattern

1 RU = 44,45 mm (1¾˝).

H = overall height in mm
D = overall depth in mm
W = overall width in mm

h = useable height (for 19˝ units) in mm
d = useable depth (frame can be swivel) in mm
RU = Rack units

Models	RU	H	h	D	w	W	Weight
RSS-5524 B	24	1250	1067	600	560	800	98 kg
RSS-5530 B	30	1515	1334	600	560	800	113 kg
RSS-5540 B	40	1960	1778	600	560	800	137 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, (for RSS-Series) **RFF-300**

With heavy rackmount devices the use of a pair of RGL-550 slide rails is recommended.

Slide rails, (1 pair, for RSS-Series). **RGL-550**

19˝-SWING FRAME CABINETS ›RSS‹

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 B**
Plexiglass door, for RSS-5530, (30 kg) . . . . **RTS-030 B**
Plexiglass door, for RSS-5540, (39 kg) . . . . **RTS-040 B**

Model designations

19˝-swing frame cabinets

19˝-Swing Frame Cabinet, (24 RU) . . . . **RSS-5524 B**
19˝-Swing Frame Cabinet, (30 RU) . . . . **RSS-5530 B**
19˝-Swing Frame Cabinet, (40 RU) . . . . **RSS-5540 B**
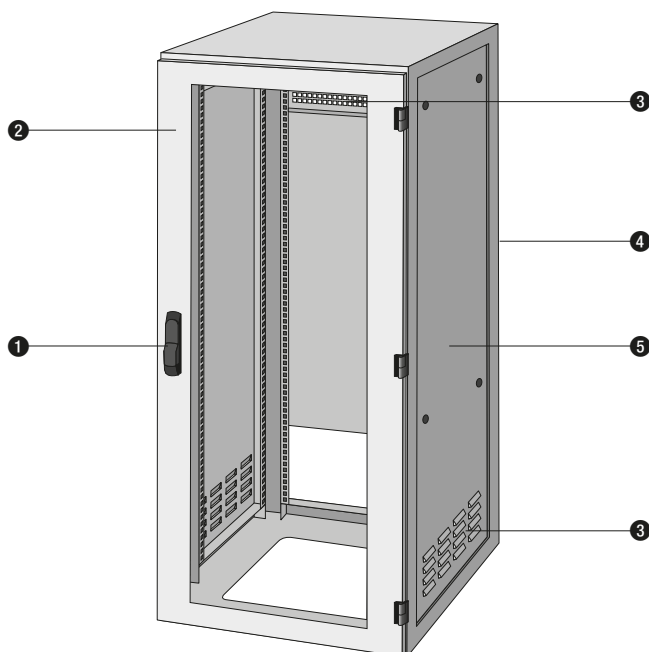
① Swivel lever lock with profile half cylinder

② Plexiglass full-view doors (optional)

③ Louvers for safe cooling

④ Rear panel unscrewable

⑤ Side panel removable

1 RU = 44,45 mm (1¾″).

H = overall height in mm
D = overall depth in mm
W = overall width in mm

h = useable height (for 19″-units) in mm
d = useable depth (for 19″-units) in mm
RU = Rack units

Models	RU	H	h	D	d	W	Weight
RAB-008 B	8	440	400	600	530	570	22,3 kg
RAB-014 B	14	707	630	600	530	570	30,0 kg
RAB-018 B	18	885	808	600	530	570	34,0 kg
RAB-024 B	24	1152	1075	600	530	570	38,0 kg
RAB-032 B	32	1508	1422	600	530	570	50,0 kg
RAB-040 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.
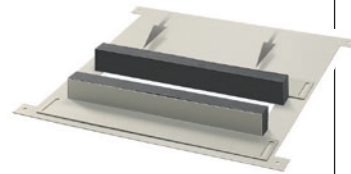
Base plate **RBP-100**

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-525 B**

MADE IN GERMANY
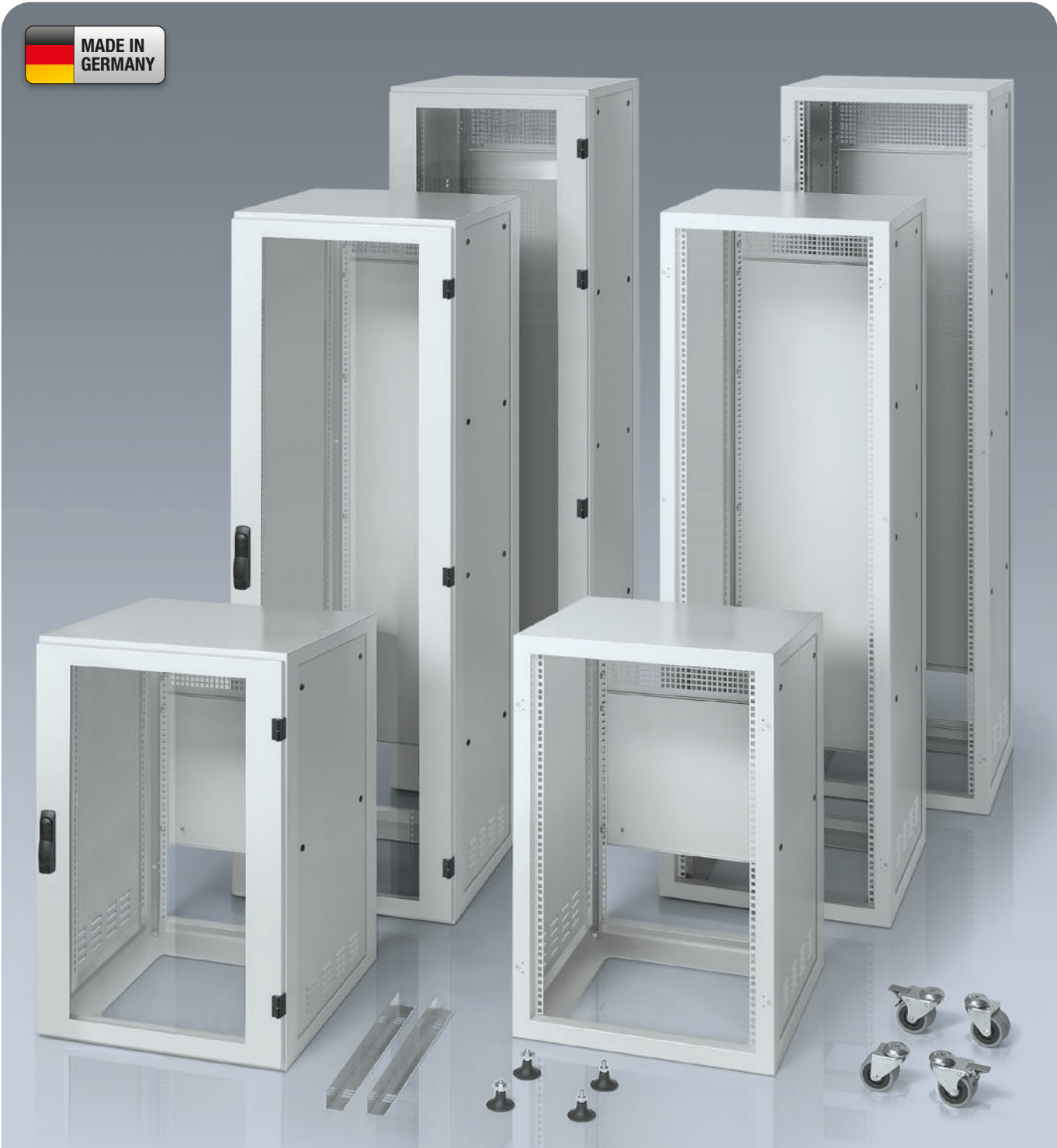
Note: When comparing prices, please take into account, our cabinets of the RAB series are delivered completely assembled and packaged.

Model designations

Plexiglass doors for 19˝-cabinets »RAB«

Plexiglass door, (8 RU)	**RTB-008 B**
Plexiglass door, (14 RU)	**RTB-014 B**
Plexiglass door, (18 RU)	**RTB-018 B**
Plexiglass door, (24 RU)	**RTB-024 B**
Plexiglass door, (32 RU)	**RTB-032 B**
Plexiglass door, (40 RU)	**RTB-040 B**

Model designations

19˝-cabinets without doors

19˝-Cabinet, (8 RU)	**RAB-008 B**
19˝-Cabinet, (14 RU)	**RAB-014 B**
19˝-Cabinet, (18 RU)	**RAB-018 B**
19˝-Cabinet, (24 RU)	**RAB-024 B**
19˝-Cabinet, (32 RU)	**RAB-032 B**
19˝-Cabinet, (40 RU)	**RAB-040 B**

R·C·S
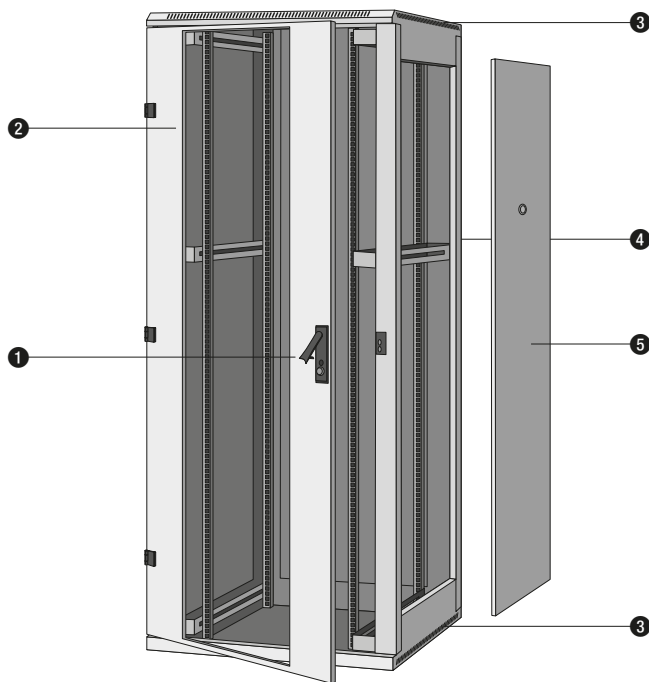
① Handle with grip recess
② Full view plexiglass doors
③ Louvers for safe cooling
④ Rear panel removable
⑤ Side panel removable

1 RU = 44,45 mm (1¾˝).

H = overall height in mm
D = overall depth in mm
W = overall width in mm

h = useable height (for 19˝-units) in mm
d = useable depth (for 19˝-units) 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-402 A**
220V / 60 W, 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, (½ 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**

19˝-CABINET SERIES ›RVP‹

R·C·S

MADE IN EUROPE

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‹ **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**

RCS

19″-WALL CABINET SERIES ›WSH‹
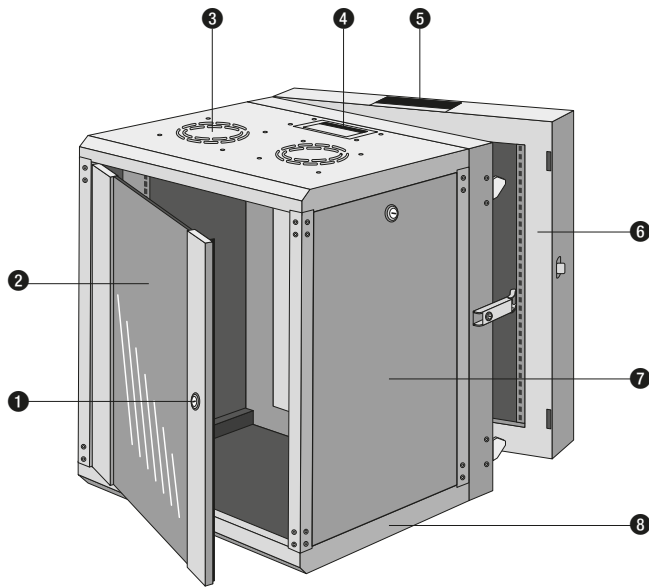
① Lockable security glass door

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)

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.

★

1 RU = 44,45 mm (1¾″).

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

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**

19˝-WALL CABINET SERIES ›WSH‹

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**

MADE IN GERMANY

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 (1³/₄˝) **D** = Total depth in mm
H = Total height (with feets) in mm **d** = Built-in depth (for 19˝-Devices) in mm
h = Built-in heigth (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**

19˝-ANGLE-FLIGHT-CASE SERIES ›WFC‹

R·C·S

MADE IN GERMANY
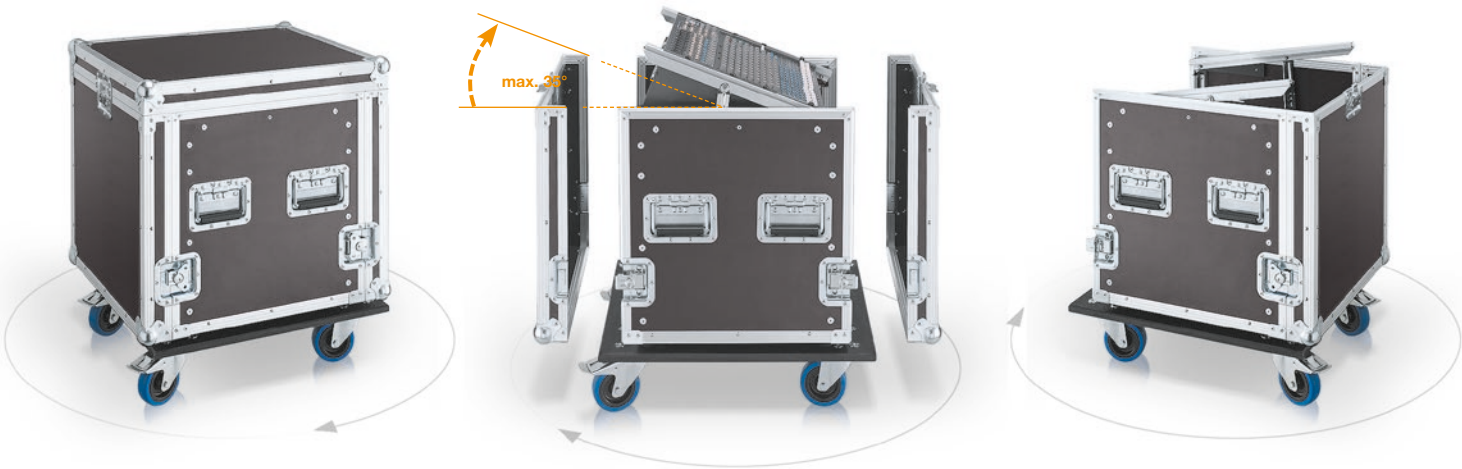
Description

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˝).

- 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
WFC-010U	10	580	455	685	500	550	19,5 kg
WFC-012U	12	670	545	685	500	550	20,2 kg
WFC-015U	15	805	680	685	500	550	21,0 kg
WFC-020U	20	1003	905	685	500	550	23,0 kg

RU = 1 RU about 44,45 mm (1³/₄˝) **D** = Total depth in mm
H = Total height (with feets) in mm **d** = Built-in depth (for 19˝-Devices) in mm
h = Built-in heigth (for 19˝-Devices) in mm **W** = Total width in mm

Special sizes are available on request!

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**

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

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.

19˝-Blank Panel, 1 RU (weight: 0,34 kg) **RLP-001**
19˝-Blank Panel, 2 RU (weight: 0,59 kg) **RLP-002**
19˝-Blank Panel, 3 RU (weight: 0,85 kg) **RLP-003**

19˝-Vent Panel, 1 RU (weight: 0,28 kg) **RLF-101**
19˝-Vent Panel, 2 RU (weight: 0,47 kg) **RLF-102**
19˝-Vent Panel, 3 RU (weight: 0,66 kg) **RLF-103**
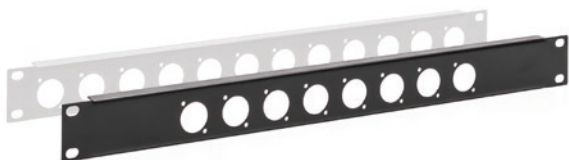
Description

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.

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.

19˝-XLR-Rack Panel, 1 RU, 8 XLR (weight: 0,30 kg) **RXP-081**

19˝-Protective Grid, 1 RU (weight: 0,43 kg). **RSG-001**
19˝-Protective Grid, 3 RU (weight: 0,46 kg). **RSG-002**

19˝-ACCESSORIES

Description

This 19˝ sliding shelf is suitable for depositing or mounting devices and accessories. The base plate slides on rails 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**
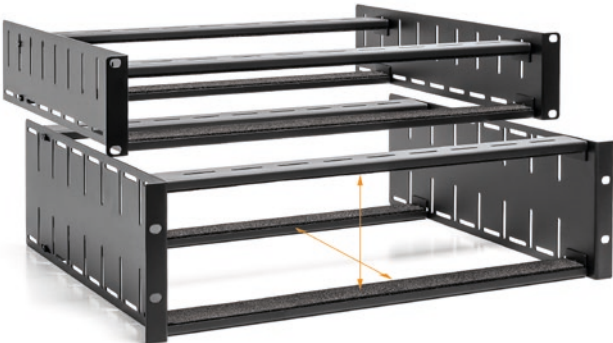
Description

These 19˝-clamping shelves are used to set different devices. The clamping rails are adjustable in height and depth, which makes it possible to adapt them to the respective device.

Please consider the following features:

● The mounting depth of these 19˝ clamping shelves is 250 mm.

● They are finished in black powdered coat.

● The clamping rails are padded with foam rubber.

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 fasting 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**

RCS

CONTROL UNIT CONFERENCE SYSTEM

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.

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).

★

Technical data	GSC-100 A
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
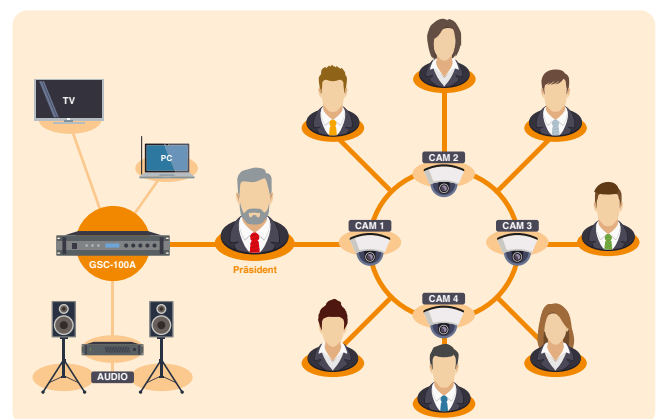
Model designations

Control unit conference system, digital . . . . **GSC-100 A**
19″, (2 RU), for up to 60 stations

CONFERENCE SYSTEM MICROPHONES

RCS

Chairman Station

Delegated 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	24 V 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)

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	24 V 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 (jack)

MADE IN GERMANY

Dynamic Microphone
with push-to-talk-button (XLR)

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.

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 K
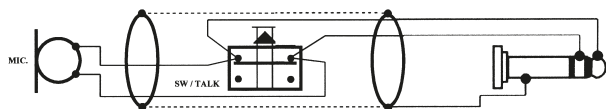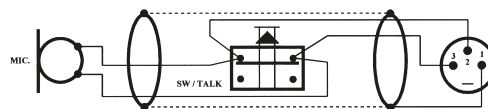
Circuit diagram shows model MS-201 X

Technical data	MS-201 K
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

Technical data	MS-201 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**

MICROPHONES

R·C·S

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).
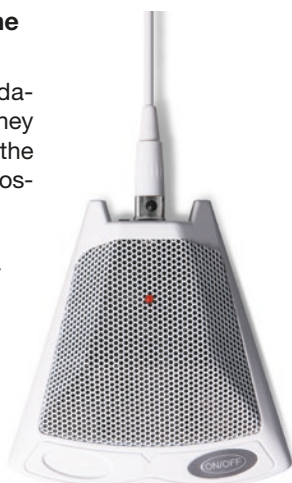
Technical data	GFM-300
Frequency	30 – 20.000 Hz
Polar pattern	Kidney
Nominal Impedance	100 ohms
Sensitivity	-65dB ±3dB at 1.000 Hz on 1Pa
Max Input-Level	130dB SPL, 1 kHz at 1% T.H.D.
Power supply	Phantom power (11-52 V DC), 2mA typical
Dimensions and Weight	(W) 102 x (H) 104 x (D) 22 mm; approx. 297g (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 equiped 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**

RCS

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 ⅜″ and ⅝″ 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 ⅜″ and ⅝″ threaded connection.

Microphone clip, for Ø 30-36 mm . **MH-800**

Desktop microphone stand
with boom arm

Sturdy desktop stand with boom arm that extends up to 40 cm. dles.

The holder comes with a ⅜″ and ⅝″ threaded connection.

Desktop stand **TS-060**

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 ⅜″ 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 ⅜″ thread.

The swivel boom has a length of 85 cm and a ⅜″ 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 ⅜″ thread.

Floor stand **BS-190**
Floor stand **BS-195**
with boom arm

Microphone/Speaker Socket
surface or flush mounting

Connection box with white plastic cover for surface or flush mounting in 55 mm switch boxes.
Can be combined with the surface program GIRA System 55.

Color: RAL 9010, matt

Surface mounting:
(81x81x45 mm)

DL-055 AS

DM-055 AX

Speaker Socket. . . . . **DL-055 AS**
with Speakon socket, incl. plastic surface frame
Microphone Socket . . . .**DM-055 AX**
with XLR socket, incl. plastic surface frame

Flush mounting:
(81x81x15 mm)

DL-055 US

DM-055 UX

Speaker Socket. . . . . **DL-055 US**
with Speakon socket
Microphone Socket . . . . **DM-055 UX**
with XLR socket

HAND-MICROPHONES

RCS

Dynamic Microphone

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 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 XLR plug, balanced. . . . . **DM-202 X**

Dynamic Microphone

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
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**

Electret Cudgel Microphone (with phantom power supply 9-52V DC)

Roll-Off/Flat-switch
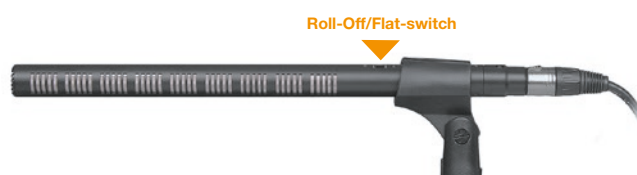
Description

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)

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-Installation Socket

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**

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**

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^2
- Colour: black, blue

Speaker-Coupler, black .... **SPC-204 M**

Speaker-Installation Socket (4-pin)

FEMALE

- 4-pin Speaker-installation-jack
- Robust plastic cabinet
- Colour: black
- Typ: D

Speaker-Installation Socket, (4-pin) .... **SPC-104 F**

CONNECTORS WITH CABLE

RCS

XLR Cable

- 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^2
- Colour: black, blue
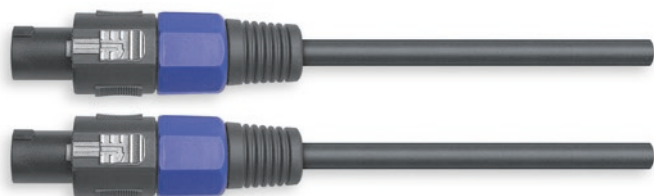
Speaker Cable, 10 m **ACC-107**

Speaker Cable, desired length

- 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^2
- Colour: black, blue

Ihre Wunsch-Kabellänge (bis max. 40 m)

Speaker Cable, [desired length] **ACC-108/xx**

XLR Cable

- Bal. XLR-Cable (connector / inline jack)
- Strain Relief with cable-bend protection
- Cable diameter: 6 mm
- Cable color: black

XLR-Cable, 5 m **ACC-050**
XLR-Cable, 10 m **ACC-100**

Cable Jack Plug 3,5 mm (stereo) on 2 x Cinch (L/R)

- 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 2x Cinch (M) (L/R) on 2x Cinch (M) (L/R)

- Cable cinch plug L/R on cinch plug L/R
- Fused with cable-bend protection

Cable 2x Cinch (M) on 2x Cinch (M), 3 m **ACC-061**

4x 16-FREQUENCIES

MODULAR UHF-SYSTEM

R·C·S®

AUDIO-SYSTEMS

UHF WIRELESS-MICROPHONE SYSTEM

Mobile- or fixed installation for:

- Exhibitions and Fairs
- Seminars and Schools
- Stage Church and Sporting Events

FREQ
4x16

wireless
(((•)))

MODULAR SYSTEM / 4x 16 FREQUENCIES

UHF-800

4x16 UHF FREQUENCIES

DIVERSITY-SYSTEM

Picture: Full extension of the UR-016 (+ 4 modules URM-016)

■ **True diversity technology**

■ **Available in 2 frequencies**

■ **620-640 MHz + 863-865 MHz**

The module carrier UR-016 B / C can be equipped as required with up to 4 receiver modules URM-016 B / 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 requiremend 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

★

Basis version: UR-016 without modules (URM-016)

4-tray Module carrier, (863-865 MHz) . . . . **UR-016 B**
for up to 4 pcs. URM-016 B, incl. power supply, 19″ angle and antennas

4-tray Module carrier, (620-640 MHz) . . . . **UR-016 C**
for up to 4 pcs. URM-016 C, incl. power supply, 19″ angle and antennas

Technical data	UR-016 B	UR-016 C
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-016 B / 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-016 B**
Extension module with 16 frequencies for UR-016 B

UHF-Receiver Module, (620-640 MHz) . . . . **URM-016 C**
Extension module with 16 frequencies for UR-016 C

UHF-Wireless Hand Microphone

C€ 0336
C€ 0336①

Description

This UHF-Hand Microphone is equipped with a premium condenser microphone capsule. It is a very handy micro-phone. 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 con-ducted 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-200S**
Neckworn Microphone, black **HS-200B**

UHF-Bodypack-Transmitter

C€ 0336
C€ 0336①

3-pin **MINI XLR**

for LA-200B or HS-200S/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-016B**
UHF-Transmitter, (620-640 MHz) **UB-016C**

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-200B**

RCS ACCESSORIES

Accessories

19˝-Rackmount Set
for 1 pcs. UR-016

19˝ brackets for antenna mounting on one receiver unit (1 RU).

Mounting-Set . . **RU-502 T**
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-200 TNC**
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

R·C·S®
AUDIO-SYSTEMS

UHF WIRELESS-MICROPHONE SYSTEM

Mobile or fixed installation for:

■ Exhibitions and Fairs
■ Seminars and Schools
■ Stage, Church and Sporting Events

FREQ
700

wireless

RCS

UHF-800

700 UHF FREQUENCIES

DIVERSITY-SYSTEM

TRUE DIVERSITY UHF RECEIVER

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 "F" 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 F and UWB-700 F 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.

● When upgrading to multi-channel systems, 8 UHF systems can be used simultaneously

Technical data	UWR-701 F
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

AB-200 B   +   AN-200 B   +   AH-200 B   =

AS-201 B

Multi-channel-systems can be assembled with accessory components. The splitter AS-200 B (19″, 1 RU) manages up to 4 transmitters UWR-701 F. 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 B**

Information about the frequencies:
The frequencies used are generally assigned for professional users. It is no longer necessary to register for use.

UHF-Receiver, 700 frequencies, (630-660 MHz) . . . . **UWR-701 F**
complete with mains adapter and antennas

1 CHANNEL-SYSTEM / 700 FREQUENCIES

RCS

UHF-Wireless Hand Microphone

C€ 0336①

synchronization
at your fingertips

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 F is easily performed using the sync button.

Technical data	UWH-701 F
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	80 – 100 m
Dimensions / Weight	Ø 44,3 mm x L 250 mm; 300 g

UHF-Hand Microphone, (700 frequencies) . . . . **UWH-701 F**

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

C€ 0336①

synchronization
at your fingertips

3-pin **MINI XLR**

for LA-200 B
or HS-200 S/B

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 F is easily performed using the sync button.

Technical data	UWB-700 F
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	80 – 100 m
Dimensions / Weight	W 65 mm x H 100 mm x D 27 mm; 150 g

UHF-Bodypack, (700 frequencies) . . . .**UWB-700 F**

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˝-Rack Mounting-Set
for one UWR-701 F

19˝ brackets for one Receiver unit (1 RU).

Mounting-Set **RU-401**
1RU, for one UWR-701 F

19˝-Rack Mounting-Set
for front mounting the antenna

19˝ mounting bracket for mounting the antenna (BNC-Connector) on the front of one Receiver unit.

Mounting-Set . . **RU-401 B**
1RU, for one UWR-701 F

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 F

The holder comes with a ⅜˝ and ⅝˝ thread.

Mic.-Holder **MH-800**
for wireless Hand microphones

UHF-Antenna-Holder

Ant.-Holder . . . . **AH-200 B**
(pair)

UHF-Antenna-Booster

+9dB

Ant.-Booster . . . . **AB-200 B**
(pair)

Accessories

Splitter- and Combiner-Set AS-100
Depending on the application can be be using the AS-100 set to reduced or doubled the number of antennas.

Example 1:
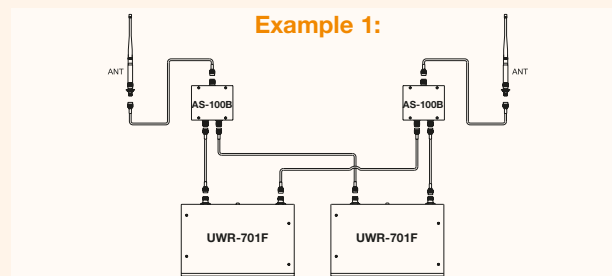
By using 2 St. UHF receivers in just 1 RU, it is useful to reduce the number of antennas accordingly (eg when using the 19˝ Rack Mounting-Set RU-203 B). If the antennas are installed on a panel front and the cable length is about 10 m, it is recommended to use the additional signal amplifier AB-200 B.

Example 2:
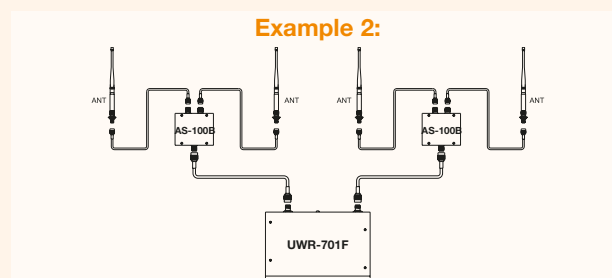
Broadcasting in technically difficult areas such as angled buildings, but also on large areas such as athletic fields or arenas, it may be useful to increase the number of antennas, so as to ensure a uniform, comprehensive signal stability. For cable lengths over 10 meters may cause interference, so an additional signal amplifier AB-200 B is recommended.

Splitter- and Combiner-Set **AS-100**
contain 2 pieces

Active Directional Antenna
for UWR-701 F

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 be effectively excluded. Suited to the optional AH-300 antenna bracket for wall, ceiling or tripod mounting.

Active Directional Antenna . . . . **AN-300 B**
Antenna-Holder **AH-300**
for AN-300 B, with 3 / 8˝ thread for wall, ceiling or tripod mount

700-FREQUENCIES

2 CHANNEL-SYSTEM

R·C·S®
AUDIO-SYSTEMS

UHF WIRELESS-MICROPHONE SYSTEM

Mobile or fixed installation for:
- Exhibitions and Fairs
- Seminars and Schools
- Stage, Church and Sporting Events

FREQ
2x700

wireless
(((•)))

RCS

2 CHANNEL-SYSTEM / 700 FREQUENCIES

NEW

UHF-600

2x700 UHF FREQUENCIES

DIVERSITY-SYSTEM

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 "F" of our successful UWR series provide the user with all the details required for safe operation and convenient handling. The system is designed in 2-channel technology and enables the use of additional systems to easily expand up to 10 radio links. 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 F and UWB-700 F 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 10 UHF channels in the simultaneous operation can be used simultaneously

Information about the frequencies:
The frequencies used are generally assigned for professional users. It is no longer necessary to register for use.

UHF-Empfänger mit 19″-Rack Montage-Set (im Lieferumfang enthalten)

UHF-Receiver, 2x 700 frequencies, (630-660 MHz) . . . . **UWR-702 F**
complete with mains adapter and antennas

Technical data	UWR-702 F
Frequency Range	630 – 660 MHz (2x 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 400 mm x H 175 mm x D 44.3 mm
Weight	approx. 2 kg

UHF Antenna-Splitter, Booster and external Antenna

AB-200 B   AN-200 B   AH-200 B

AS-201 B

Multi-channel-systems can be assembled with accessory components. The splitter AS-200 B (19″, 1 RU) manages up to 4 transmitters UWR-701 F. 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 B**

246

UHF-Wireless Hand Microphone

$C \in 0336 ①$

synchronization
at your fingertips

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 F is easily performed using the sync button.

Technical data	UWH-701 F
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	80 – 100 m
Dimensions / Weight	Ø 44,3 mm x L 250 mm; 300 g

UHF-Hand Microphone, (700 frequencies) . . . . **UWH-701 F**

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

$C \in 0336 ①$

synchronization
at your fingertips

3-pin **MINI XLR**

for LA-200 B
or HS-200 S/B

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 F is easily performed using the sync button.

Technical data	UWB-700 F
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	80 – 100 m
Dimensions / Weight	W 65 mm x H 100 mm x D 27 mm; 150 g

UHF-Bodypack, (700 frequencies) . . . .**UWB-700 F**

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**

R·C·S ACCESSORIES

Accessories

19˝-Rack Mounting-Set
for front mounting the antenna

19˝ mounting bracket for mounting the antenna (BNC-Connector) on the front of one Receiver unit.

Mounting-Set . . **RU-203 B**
1RU, for one UWR-702 F

Microphone-Holder
for UWH-701 F

The holder comes with a ⅜˝ and ⅝˝ thread.

Mic.-Holder **MH-800**
for wireless Hand microphones

UHF-Antenna-Booster

+9dB

Ant.-Booster . . . **AB-200 B**
(pair)

UHF-Antenna-Holder

Ant.-Holder . . . . **AH-200 B**
(pair)

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**

Active Directional Antenna
for UWR-702 F

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 be effectively excluded. Suited to the optional AH-300 antenna bracket for wall, ceiling or tripod mounting.

Active Directional Antenna . . . . **AN-300 B**
Antenna-Holder **AH-300**
for AN-300 B, with 3 / 8˝ thread for wall, ceiling or tripod mount

TOUR GUIDE-SYSTEM

UHF-*wireless*

R·C·S®
AUDIO-SYSTEMS

Ideally suited for:
- ■ City Tours
- ■ Operational facilities or Museums
- ■ Presentations of any kind

FREQ
16

wirelesss

RCS

UHF-*wireless* MOBILE TOUR-GUIDE SYSTEM

Registration free operation!

RECEIVER
UBR-016

TRANSMITTER
UBT-016

EP-200

LA-300

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 offered accessories an individual function set can be assembled and, if needed, extended.

- 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

with Hand Microphone
UBH-016

oder

with Bodypack
UBT-016

Receiver
UBR-016
in any quantity

MOBILE TOUR-GUIDE SYSTEM UHF-*wireless*

R·C·S

The mobile TRANSMITTERS (for Tour-Guide System) **are either available:**

Transmitter

UHF-Bodypack
CE 0681

HS-300
optional
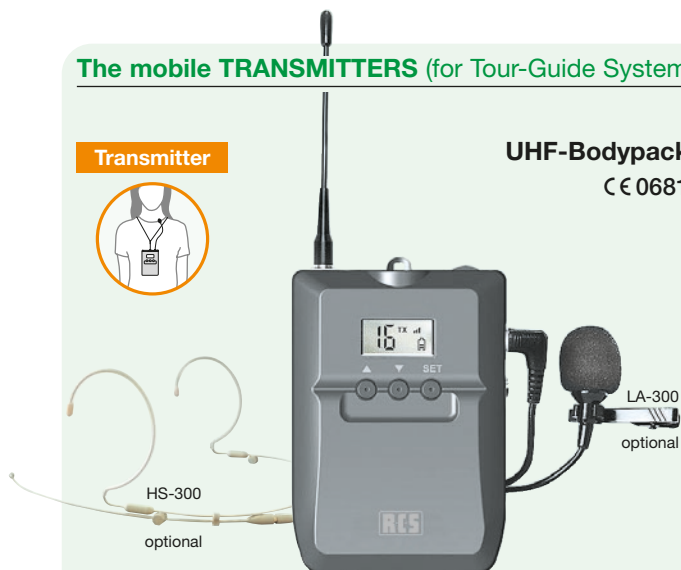
LA-300
optional

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
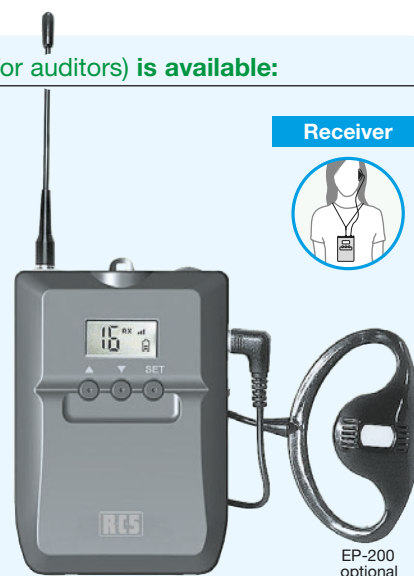
EP-200
optional

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**

RCS
UHF-*wireless* MOBILE TOUR-GUIDE SYSTEM

Accessories

Charger-Kit
for 2 pcs. UBH-016

Charger for 2 handheld microphones UBT-016. Power supply included.

Charger-Kit **ACS-002**
for 2 pcs. UBH-016

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-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-Bag ... **ACS-020**
for 20 pcs. UBR-016 or UBT-016

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-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
Power Megaphones

12
Page
253 – 298

Part 12

SCHOOL-CUBE 100

VICBOSS SERIES

- Kindergartens
- Classroom
- Small presentations
- Training rooms

R·C·S®

mobile sound

bt wireless connection

< 30 Pers.

Music & Speech

Mains

Weight 2,5 kg

RCS

bt **wireless connection**

- ■ **MP3 multiplayer with recording function**
- ■ **BT function**
- ■ **Remote Control**

Our PWA series smallest member - really big!

The new PWA-103 was specifically developed for the schools and in particular for the sound reinforcements in the classroom.

The device is standardly equipped with multiplayer, whose media data can be played back via USB, SD card or BT. The recording function is also integrated.

The visually appealing MDF housing has a very robust design and, in conjunction with the 5.25 inch full range speaker, ensures a natural and clear sound.

★

Note: This amp is designed for daily and ongoing school and classroom use. To ensure the uncompromising continuous operation, we have dispensed with a battery in this version. The device is maintenance-free and always ready for use.

Technical data	PWA-103
Program power / RMS	40 W / 20 W
Power supply	via included DC power supply (15V 3.3 A)
Speaker	5.25″ Full Range Speaker
Signal inputs	Line cinch, MIC jack 6,3 mm
Signal outputs	Line out cinch
Housing	MDF
Colour	mint-green high gloss
Dimensions (WxHxD) / Weight	210 x 200 x 220 mm, 2,5 kg

Please consider the following features:

- ● Small, light and handy.
- ● Very robust MDF housing.
- ● Mains operation, therefore suitable for continuous use.
- ● Signal input for the connection of PC or smartphone.

Model designation

SCHOOL-CUBE 100, 40 W **PWA-103**

SCHOOL-CUBE 100 PA SYSTEM FOR SCHOOL AND EDUCATION

RCS

NEW

BT/MP3-Player
with SD-Card and USB

Controller:
Master, Player, Echo,
Bass, Treble and Aux

AUX IN / OUT
Cinch

Power supply
DC 15V

Controller for
Microphone

Microphone-Input jack

SCHOOL-CUBE Accessories:

Dynamic Microphone

Great quality dynamic Handmicro-
phone with kidney characteristics. It
does not have back coupling problems
and wind- and pop-protection are inte-
grated. A low-noise On- and Off-switch
is integrated on the handle.
Included in the delivery is a 5 m cable and
a microphone holder.

Dynamic Microphone, jack-plug, sym... . . . . **DM-202 K**

Carriage and Storage Cover

Weatherproof,   high-quality
vinyl fabric cover for carriage,
while use and storage of the
SCHOOL-CUBE 100.
With removable pocket for
accessories.

Carriage and Storage Cover, for PWA-103 . . . . **VC-020**

SCHOOL-CUBE 100 ³ᴰ

VICBOSS SERIES

R·C·S®
mobile sound

- Kindergartens
- Classroom
- Small presentations
- Training rooms

bt wireless connection

< 30 Pers. | Music & Speech | Mains | Weight 3,5 kg

RCS

- **3D Sound**
- **MP3 multiplayer with recording function**
- **BT function**
- **VHF-receiver system (registration free)**

Our new development for kindergartens, school classes and audience groups:

The PWA-104 has a multidirectional speaker system that delivers the sound evenly in three different directions. Hearing loss and intelligibility due to the narrow angles of the beam is now a matter of the past.

The device is standardly equipped with multiplayer, whose media data can be played back via USB, SD card or BT. The recording function is also integrated.

The visually appealing MDF housing is designed very robust and, in conjunction with the three 5.25-inch broadband speakers, ensures a natural and clear sound.

The included VHF receiver operates in the signal-free and signal-stable frequency range.

> **Note:** This amp is designed for daily and ongoing school and classroom use. To ensure the uncompromising continuous operation, we have dispensed with a battery in this version. The device is maintenance-free and always ready for use.

Technical data	PWA-104
Program power / RMS	50 W/30 W
Power supply	via included DC power supply (15V 3.3 A)
Speaker	3 x 5.25″ Full Range Speaker
Signal inputs	Line cinch, MIC jack 6,3 mm
Signal outputs	Line out cinch
VHF-Receiver	174-216 MHz, registration-free
Colour	mint-green high gloss
Dimensions (WxHxD) / Weight	210 x 200 x 220 mm; 3,5 kg

For wireless microphone operation, either the cordless VH-200 hand-held microphone or the VB-200 bodypack transmitter are available (see optional accessories).

Please consider the following Features:

- With integrated VHF receiver for the wireless microphone operation.
- Sonicating a larger area with a 3D speaker system radiating in three directions.
- Mains operation, therefore suitable for continuous use.
- Signal input for the connection of PC or smartphone.

Model designation

SCHOOL-CUBE 100 3D, 50 W **PWA-104**
with integrated Multifunction-player and 1-channel VHF-receiver system

SCHOOL-CUBE 100 PA SYSTEM FOR SCHOOL AND EDUCATION

R·C·S

D 3D SOUND

NEW

optional Accessories

BT/MP3-Player with SD-Card and USB

VHF-Receiver with Volume control

Controller: Master, Player, Echo, Bass, Treble and Aux

AUX IN / OUT Cinch

Power supply DC 15V

Controller for Microphone

Microphone-Input jack

SCHOOL-CUBE Accessories:

VHF-Hand Microphone

VHF handheld microphone for the wireless signal transmission to the SCHOOL-CUBE. The dynamic microphone is voice-optimized and has 10 selectable channels which are shown on the display. Power is supplied by two AA batteries or equivalent batteries.

VHF-Hand Microphone, for PWA-104 . . . . **VH-200**

Headset-Microphone

Headset for optional operation on the bodypack VB-200.
Cable length 100 cm.
With mini XLR plug.

Headset-Microphone, for VB-200 . . . . **HS-100**

VHF-Bodypack

VHF bodypack incl. Clip-on microphone, for wireless signal transmission to the SCHOOL-CUBE. The bodypack has 10 selectable channels which are shown on the display. Power is supplied by two AA batteries or equivalent batteries.

VHF-Bodypack, incl. clip-on microphone **VB-200**

Carriage and Storage Cover

Weatherproof, high-quality vinyl fabric cover for carriage, while use and storage of the SCHOOL-CUBE 100.
With removable pocket for accessories.

Carriage and Storage Cover, for PWA-104 . . . . **VC-020**

Battery-Set AA for VB-200 and VH-200

The set consists of 2 pieces of NiMH batteries AA (Mignon). Suitable for the transmitters VH-200 and VB-200.

Battery-Set AA, 2x NiMH AA; for VB-200 and VH-200. . . . . . . **UBB-002**

Charging Station for VB-200 and VH-200

Charging station for convenient charging of the Microphone VH-200 and the Bodypack VB-200.

Both transmitters can be loaded individually or simultaneously in the docking station.

Charging Station, for VB-200 and VH-200 . . . . **LG-002**

SCHOOL-CUBE 500

VICBOSS SERIES

R.C.S®

mobile sound

■ Classrooms and offices
■ Demonstration and presentations
■ League and community centers
■ Conferences and training courses

bt wireless connection

< 50 Pers. | Music & Speech | Mains & Battery | Weight 6,5 kg

RCS

PA SYSTEM FOR SCHOOL AND EDUCATION **SCHOOL-CUBE 500**

■ **MP3 multiplayer with recording function**
■ **BT function**
■ **VHF-receiver system (registration free)**
■ **Smart battery status indicator**

The technically state-of-the-art SCHOOL-CUBE 500 loudspeaker and amplifier system impresses with its rich, crystal-clear sound with high battery life and overcharge protection. The device is ideal for use in the classroom.

For wireless microphone operation, either the cordless VH-200 hand-held microphone or the VB-200 bodypack transmitter are available (see optional accessories).

The device already includes a standard VHF receiver. As a transmitter you can choose between the Hand Microphone VH-200 and the Bodypack VB-200 (see optional accessories).

A VHF receiver system is used with frequencies are which in Germany in the registration-free and interference-insensitive area.

★

Technical data	PWA-510 B
Program power / RMS	50 W / 30 W
Power supply	15V 3.3 A
Battery	12V / 3 Ah
Operating time battery	6 hours
Speaker	5″ Full Range
Inputs	Line in cinch; Line in jack
Outputs	Line out cinch
VHF-Receiver	174-216 MHz, registration-free
Tone regulation	double
Case	MDF
Colour	glossy white
Dimensions (WxHxD); Weight	208 x 243 x 220 mm; 6,5 kg

Please consider the following features:

● Mains and battery operation.

● Robust and sound-optimized MDF housing.

● With integrated VHF receiver for the wireless microphone operation.

● Signal input for the connection of PC or smartphone.

Model designation

SCHOOL-CUBE 500, 50 W ....**PWA-510 B**
with integrated Multifunction-player and 1-channel VHF-receiver system

SCHOOL-CUBE 500 PA SYSTEM FOR SCHOOL AND EDUCATION

R·C·S

NEW

VHF-Receiver
with volume control

Controller:
Master, Player, Echo,
Bass, Treble and Aux

AUX IN / OUT
Cinch
Power supply
DC 15V

BT/MP3-Player
with SD-Card and USB

Controller for
Microphone

Microphone-Input jack
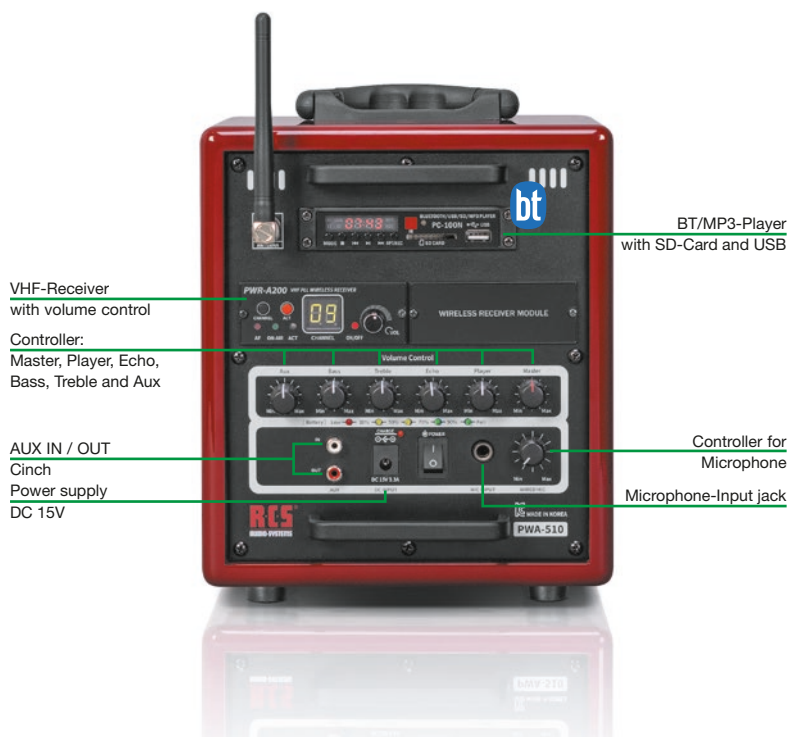
optional Accessories

SCHOOL-CUBE Accessories:

VHF-Hand Microphone

VHF handheld microphone for the wireless signal transmission to the SCHOOL-CUBE. The dynamic microphone is voice-optimized and has 10 selectable channels which are shown on the display. Power is supplied by two AA batteries or equivalent batteries.
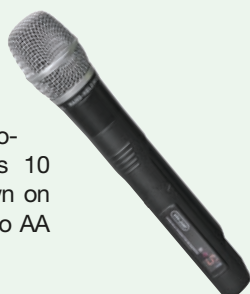
VHF-Hand Microphone, for PWA-510 B **VH-200**

Headset-Microphone

Headset for optional operation on the bodypack VB-200.
Cable length 100 cm.
With mini XLR plug.

Headset-Microphone, for VB-200 . . . . **HS-100**

VHF-Bodypack

VHF bodypack incl. clip-on microphone, for wireless signal transmission to the SCHOOL-CUBE. The bodypack has 10 selectable channels which are shown on the display. Power is supplied by two AA batteries or equivalent batteries.

VHF-Bodypack, incl. clip-on microphone **VB-200**

Carriage and Storage Cover

Weatherproof, high-quality vinyl fabric cover for carriage, while use and storage of the SCHOOL-CUBE 500.
With removable pocket for accessories.

Carriage and Storage Cover, for PWA-510 B **VC-030**

Battery-Set AA for VB-200 and VH-200

The set consists of 2 pieces of NiMH batteries AA (Mignon). Suitable for the transmitters VH-200 and VB-200.

Battery-Set AA, 2x NiMH AA; for VB-200 and VH-200 . . . . **UBB-002**

Charging Station for VB-200 and VH-200

Charging station for convenient charging of the microphone VH-200 and the bodypack VB-200.

Both transmitters can be loaded individually or simultaneously in the docking station.

Charging Station, for VB-200 and VH-200 . . . . **LG-002**

SCHOOL-CUBE 700

VICBOSS SERIES

R·C·S®

mobile sound

- Gymnastics and therapy rooms
- Fairs and exhibitions
- Demonstrations and presentations
- Society and community centers
- Conferences and training

bt wireless connection

~50 Pers. | Music & Speech | Mains & Battery | Weight 8,0 kg

R·C·S

bt wireless connection

- ■ **CD/MP3-multifunction player**
- ■ **BT-function**
- ■ **VHF-receiver system (registration and free of charge)**
- ■ **Powerful sound**

The technically mobile speaker and amplifier system SCHOOL-CUBE 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 VHF-receivers for using VH-200 (hand microphone) or VB-200 (bodypack). It can be connected to a headset or a clip on microphone.

A VHF receiver system is used with frequencies are which in Germany in the registration-free and interference-insensitive area.

Please consider the following features:

- ● CD/MP3/BT multifunction player with adjustable playback speed.
- ● Two device versions for single or dual channel microphone operation.
- ● Robust and sound-optimized MDF housing.
- ● Intelligent battery status indicator.

★

Technical data	PWA-730 B U1/U2
Program power / RMS	85 W / 50 W
Power supply	15V 3.3 A
Battery	12V / 7.2 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
VHF-Receiver	174-216 MHz, registration-free
Tone regulation	double
Case/Colour	MDF; glossy black
Dimensions (WxHxD); Weight	240 x 280 x 245 mm; 8,0 kg

Model designations:

SCHOOL-CUBE 700, 85 W . . . .**PWA-730 B U1**
with integrated Multifunction-player and 1-channel VHF-receiver system

SCHOOL-CUBE 700, 85 W . . . .**PWA-730 B U2**
with integrated Multifunction-player and 2-channel VHF-receiver system

VHF-Receiver

The frequencies of the VHF module are in the range of 174-216 MHz and are therefore EU-wide registration-free.

VHF-Receiver, (for PWA-Series) **VHF-016**
for upgrading, frequency range 174-216 MHz

SCHOOL-CUBE 700 PA SYSTEM FOR SCHOOL AND EDUCATION

RCS

NEW

1. VHF-Receiver

Option:
2. VHF-Receiver

CD-/MP3-Player
with SD-Card and USB

Controller:
Master, Player, Echo,
Bass, Treble and Aux

**optional
Accessories**

Controller for Siren

Controller for
Microphone

Mute switch

Power Supply
DC 15V

AUX IN / OUT
Cinch

Microphone-
Input XLR/jack

Speaker Out
Speaker Socket

SCHOOL-CUBE Accessories:

VHF-Hand Microphone

VHF handheld microphone for the wireless signal transmission to the SCHOOL-CUBE. The dynamic microphone is voice-optimized and has 10 selectable channels which are shown on the display. Power is supplied by two AA batteries or equivalent batteries.
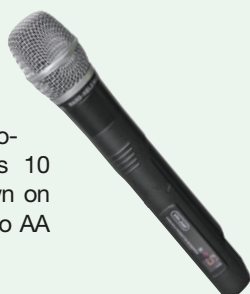
VHF-Hand Microphone, for PWA-730 B **VH-200**

Headset-Microphone

Headset for optional operation on the bodypack VB-200.
Cable length 100 cm.
With mini XLR plug.

Headset-Microphone, for VB-200 . . . . **HS-100**

VHF-Bodypack

VHF bodypack incl. clip-on microphone, for wireless signal transmission to the SCHOOL-CUBE. The bodypack has 10 selectable channels which are shown on the display. Power is supplied by two AA batteries or equivalent batteries.

VHF-Bodypack, incl. clip-on microphone **VB-200**

Carriage and Storage Cover

High-quality, weatherproof vinyl fabric cover for carriage, while use and storage of the SCHOOL-CUBE 700.
With removable pocket for accessories.

Carriage and Storage Cover, for PWA-730 B **VC-070**

Battery-Set AA for VB-200 and VH-200

The set consists of 2 pieces of NiMH batteries AA (Mignon). Suitable for the transmitters VH-200 and VB-200.

Battery-Set AA, 2x NiMH AA; for VB-200 and VH-200. . . . . . . **UBB-002**

Charging Station for VB-200 and VH-200

Charging station for convenient charging of the microphone VH-200 and the bodypack VB-200.

Both transmitters can be loaded individually or simultaneously in the docking station.

Charging Station, for VB-200 and VH-200 . . . . **LG-002**

DIGITAL SOUND-CENTER 100

R·C·S®

mobile sound

- Seminars and conferences
- Advertising and sales promotion
- Exhibitions and fairs
- Hotels and sporting events
- Schools and presentations

optional with:

bt wireless connection

< 150 Pers.

Music & Speech

Mains & Battery

Weight 13 kg

R·C·S

Portable PA System **DIGITAL SOUND-CENTER 100**

- ■ **Trolley function**
- ■ **Powerful class D amplifier**
- ■ **True diversity**
- ■ **VOICE-OVER function**

The little brother of the Digital Sound-Center DSC-150 has it's all basic functions and expansions options. The unit convince 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-101 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-2x00 BT.

★

The following basic models are available:

DIGITAL SOUND-CENTER* **DSC-101**
Basic version, without UHF-receiver modulel

DIGITAL SOUND-CENTER* **DSC-101 U1**
with integrated 1-channel UHF-receiver

DIGITAL SOUND-CENTER* **DSC-101 U2**
with integrated 2-channel UHF-receiver

Replacement Battery Set, 5.4 Ah (for DSC-101/150) **BA-035**

*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.

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-Player-Module . . . .**DSM-200 BT**
for upgrading, for audio transmission from Smartphone, Tablet or PC

DIGITAL SOUND-CENTER 100 Portable PA System

RCS

optional with:
bt **wireless connection**

Ausziehbarer Handgriff

Stauraum für 2 St. Handmikrofone u. Anschlusskabel

Optional: BT-Modul

Optional: UHF-Empfangsmodul

Regler für Module

Optional: CD/MP3/USB/BT SD-Card Player

Regler AUX AUX IN

Optional: Modul DSM-200BT USB/ BT/SD-Card

Regler u. Eingang Mikrofon

Batterieanzeige DC IN 15V, Speaker OUT, MIX OUT

Regler Master, Treble, Bass Ein- / Ausschalter

Akkufach

Netzanschluss 230 V

COMPLETE SETS for simplified ordering:

SET 1
DSC-101 without UHF-receiver and microphone,
- incl. CD-player DSM-003CD

DSC-101 SET 1 . . . . **DSC-101 S1**

SET 2
DSC-101 with integrated 1-channel UHF-receiver
- incl. CD-player DSM-003CD
- incl. UHF-receiver and hand held microphone UH-016B

DSC-101 SET 2 . . . . **DSC-101 S2**

SET 3
DSC-101 with integrated 1-channel UHF-receiver
- incl. CD-player DSM-003CD
- incl. UHF-receiver and bodypack UB-016
- incl. Headset microphone HS-200S/B

DSC-101 SET 3 . . . . **DSC-101 S3**

SET 4
DSC-101 with integrated 2-channel UHF-receiver
- incl. CD-player DSM-003CD
- incl. 2x UHF-receiver & 2 hand held microphones UH-016B

DSC-101 SET 4 . . . . **DSC-101 S4**

SET 5
DSC-101 with integrated 2-channel UHF-receiver
- incl. CD-player DSM-003CD
- incl. UHF-receiver and Bodypack UB-016
- incl. UHF-hand held microphone UH-016B
- incl. Headset microphone HS-200S/B

DSC-101 SET 5 . . . . **DSC-101 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-101 or auxiliary speaker

UHF-Accessories:

UHF-Hand microphone

C€ 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)

C€ 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-016 B**

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-200S**
Headset-Mikrophon, black **HS-200B**

RCS SOUND-CENTER

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 B**
for up to 2 speaker tripods and 1 mic stand

Connecting Cable, 30 m for Auxiliary Speaker **AC-300**

Auxiliary Speaker

With help of the passive auxiliary speaker DSC-101 ZL the degree of system efficiency can be improved.

Auxiliary Speaker . . . . **DSC-101 ZL**
passive 100 W, for SOUND-CENTER

Floor Stand

Very stable floor stand made of aluminum (3.2 kg) for setting up the DSC-101 models. The stepless height adjustment allows optimum adaptation to local conditions.

Floor Stand **QST-185**
for DSC-101 or
Auxiliary Speaker DSC-101 ZL

Technical data	DSC-101
Program power / RMS	165 W / 100 W (Class-D)
Power supply	AC 230 V or DC 24 V/3 A
Battery	2x 12 V / 5 Ah
Operating time battery	6-8 hours
Speaker	8″ Woofer
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

★

DIGITAL SOUND-CENTER 150

R.C.S ®

mobile sound

- Seminars and conferences
- Advertising and sales promotion
- Exhibitions and fairs
- Hotels andsporting events
- Schools and presentations

optional with:

bt **wireless connection**

< 250 Pers. | Music & Speech | Mains & Battery | Weight 16 kg

R·C·S

Portable PA System **DIGITAL SOUND-CENTER 150**
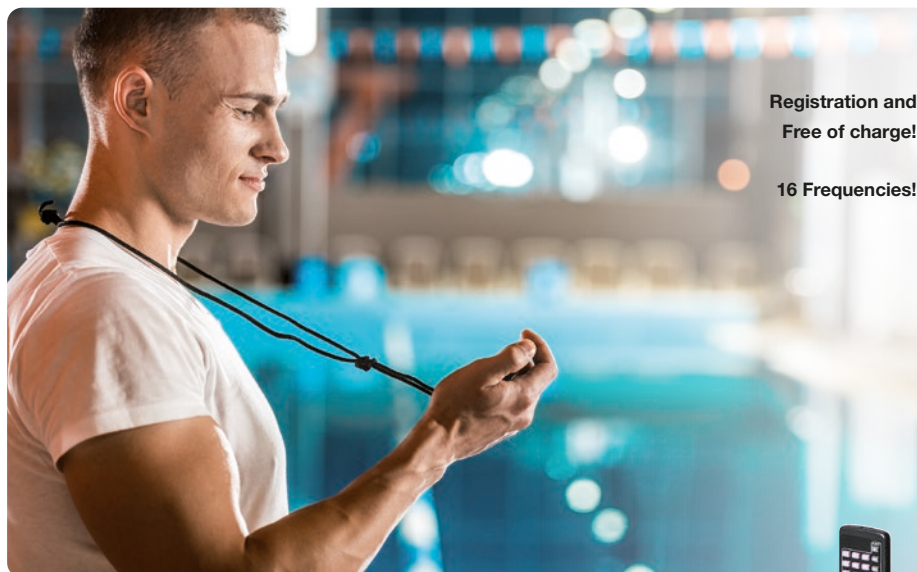
Registration and Free of charge!

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 convince 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 be selected between a multi-functional player and a digital USB/SD recorder.

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

Replacement Battery Set, 5.4 Ah (for DSC-101/150) **BA-035**

*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.

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-Player-Module..............................**DSM-200 BT**
for upgrading, for audio transmission from Smartphone, Tablet or PC

DIGITAL SOUND-CENTER 150 Portable PA System

RCS

Extendable Handle

Storage for 2 Microphones and connecting cable

Optional: up to 2 pcs. DSC-016B

Optional: CD/MP3/ USB/SD-Card Player

Empty tray

Charging bay for 4 pcs. 1,2 V batteries

Battery compartment

optional with:
bt wireless connection

Input Board with LR- and Effect controller (Voice-Over) for Module, LINE-IN and MICROPHONE-IN

Master Board with EQ Battery status display and SPEAKER OUT, MIX-OUT

On- / Off switch

Power supply 230 V

COMPLETE SETS for simplified ordering:

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-016 B

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-016 B

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-016 B
- 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

C€ 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)

C€ 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 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**

RCS SOUND-CENTER

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 B**
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-150 ZL 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 power / RMS	250 W / 150 W (Class-D)
Power supply	AC 230 V or DC 24 V/3 A
Battery	2x 12 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

★

SOUND-DESK 2

R·C·S ®

mobile sound

< 200 Pers.	Music & Speech	Mains	Weight 29 kg

- Hotels, Schools and Residential Homes
- Community Centres
- Clubs and Associations
- Exhibitions and Trade-Fairs
- Advertising and Sales Promotion

R·C·S

MOBILE ACTIVE LECTERN SYSTEM **SOUND-DESK 2**

Registration and Free of charge!

NEW

- ■ **Noble design**
- ■ **VHF-Wireless Technology**
- ■ **Music & Speech**
- ■ **2-Way Speaker System**

The new successor of our successful SOUND-DESK series: the SOUND-DESK 2 – great in sound and design, versatile and powerful.

With this elegant lectern you not only gain in terms of appearance, but technically the SD-220 also sets new standards.

The integrated 2-way loudspeaker system is convincing not only in speech. Thanks to the new concept, the reproduction of music is now also possible in outstanding quality. The device is therefore suitable for audio lectures of all kinds at schools, in presentation rooms, at fairs and exhibitions, as well as for advertising and sales events.

The integrated gooseneck microphone is 47 cm long and flexibly adjustable. It also allows changing speakers of diffe-rent sizes a comfortable standing position. The high quality electret capsule of the microphone also ensures a comfor-table speaking distance.

We supply the SD-220 with a 2-Channel radio system, where you can operate the wireless hand microphone and the bodypack with headset microphones if necessary at the same time.

Please consider the following features:

- ● A high-quality gooseneck microphone and the table ligh-ting are already included.
- ● Music signal feed via smartphone, laptop or PC.
- ● Noise-free through the use of digital power amplifier.
- ● Scratch-resistant and anti-slip shelf.
- ● 2-channel radio set incl. VH-016 and VB-016 already included in delivery.

★

Technical data	SOUND-DESK 2
Program power / RMS	120 W / 60 W
Power supply	230 V
Microphone	Electret gooseneck, 47 cm
Input MIC 1	Table microphone
Input MIC 2	jackl 6.3 mm, e.g. for DM-202 K
Input AUX	cinch, e.g. for music feed from smartphone or laptop
Input Wireless Mic	Volume control U2 radio system
Output Line	XLR, e.g. for additional active loudspeakers
Frequency range	100 Hz - 16.000 Hz
Tone control	2-fold, Treble and Bass separately
Speaker	1 tweeter, 3 full range speakers
Receiver System	VHF, 203.7 MHz and 208.7 MHz
Material	Alu, ABS
Dimensions and Weight	W 580 x H 1100 x D 420 mm / 29 kg

Model designations

SOUND-DESK 2, max. 120 W, black **SD-220**
with integrated 2-channel VHF wireless microphone receiver

SOUND-DESK 2 MOBILE ACTIVE LECTERN SYSTEM

R·C·S

Rear view of the SOUND-DESK

- Manuscript lighting
- VHF wireless Microphone Receiver
- MIC 1 (table microphone)
- MIC 2 (external microphone)
- MIC 3 (wireless microphone)
- MIC 2 input (6.3 mm jack)
- 0 dB output XLR (sym.)
- Treble
- Bass
- AUX 1 volume control
- AUX 1 input (cinch)
- Record output (cinch)
- Speaker output (left/right)

Applications for power extension

Example 1: Wired

DSC-150 ZL   DSC-150 ZL

SD-220   **Cable**
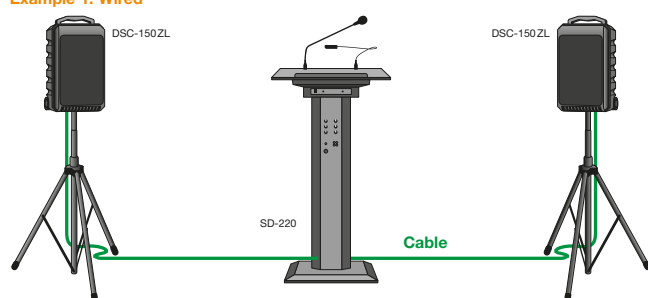
Example 2: Wireless UHF connection

DSC-150 U1   DSC-150 U1

UHF   **UHF**

UB-016B

AC-200 X

SD-220
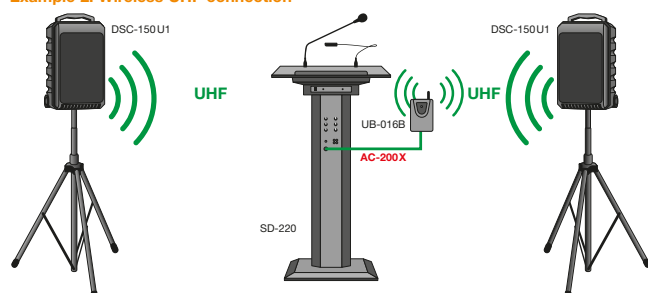
On request we configure your individual desired system. **Please call us.**

VHF-Accessories:

VHF-Hand Microphone

The VHF-Hand Microphone VH-016 works on the frequency 203.7 MHz and serves as a spare or supplemental microphone for the cordless microphone already included with the SD-220. The microphone has a battery status indicator, as well as a mute function for crack-free switching on. The power supply is provided by a 5 V block battery.

VHF-Hand Microphone (203.7 MHz)................**VH-016**

VHF-Bodypack (for HS-500)

The Bodypack VB-016 operates on the frequency 208.7 MHz and serves as a spare or supplemental transmitter for the Bodypack already included with the SD-220.

In addition to the battery status indicator, the transmitter has a volume control and a screwable 3.5 mm jack input for connecting the HS-500 headset.

VHF-Bodypack (208.7 MHz) **VB-016**

Headset-Microphone (for VB-016)

Comfortable headset microphone with high wearing comfort and very good speech intelligibility. suitable for bodypack VB-016. Cable length approx. 100 cm.

Headset-Microphone, black.......................**HS-500**

Dynamic Microphone
with 5 m cable

Vinyl-Cover

Great quality dynamic Handmicrophone with kidney characteristics. It does not have back coupling problems and wind- and pop-protection are integrated.

This heavy duty Vinyl-Cover for storage of the SOUND-DESK with an integrated pocket for accesories.

Dynamic Microphone

jack, unbalanced..... **DM-202 K**
with 5 m cable and Microphone holder

Vinyl-Cover **VC-220**
with integrated Accessoiries bag

R·C·S SOUND-DESK 2

**Rear view of the
SOUND-DESK**

SOUND-BELT 2

PORTABLE VOICE AMPLIFIER

R·C·S ®
mobile sound

- ■ **Ultra-compact - only 210g**
- ■ **Electronic Voice optimized**
- ■ **20 watts of power**

< 30 Pers.

Speech

Weight
210 g

Battery

Technical data	SB-020
Output rate/RMS	20/10 W
Power supply	Li-ion battery 7.4 V, 1000 mAh
Battery lifetime	8 – 16 hours (volume dependent)
Reach	up to 30 persons
Dimensions and Weight	W 88 x H 105 x D 35 mm; 210 g
Colour	black

Description

The new compact and inconspicuous but powerful voice amplifier SB-020 is optimized for voice transmission and therefore very suitable for teachers and lecturers.

The device has an internal charging circuit and, as a result by the use of a Li-ion battery, the charging process is very comfortable. A possible overcharge is reliably prevented by the integrated overcharge protection, so that the device is always ready for use. The battery life is 8-16 hours, depending on the volume setting.

If necessary, music signals from mobile phones, laptops, or MP3 players could be used via the „Line-in" input signal. The required audio cable is included.

★

Also included in delivery box:
+ Comfortable headset microphone
+ Hand microphone
+ Belt-clip and Lanyard
+ Audio cable for „Line-in" input (130 cm)
+ Power cable (mini-USB)

Model designations

SOUND-BELT 2, max. 20 W, incl.: Headset-Microphone **SB-020**

Headset-Microphone, (for SB-020) **HS-020**

Wireless POWER-PHONE

R·C·S ®
mobile sound

- Processions
- Propagandism
- Guided tours, exhibitions and fairs
- Sports events
- Fire brigade or clubs and associations

< 100 Pers. Music & Speech Mains & Battery Weight 3,3 kg

RCS

PORTABLE PA-SYSTEM **POWER-PHONE**

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-016 B 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.

Double Power with UHF-Wireless Network operation
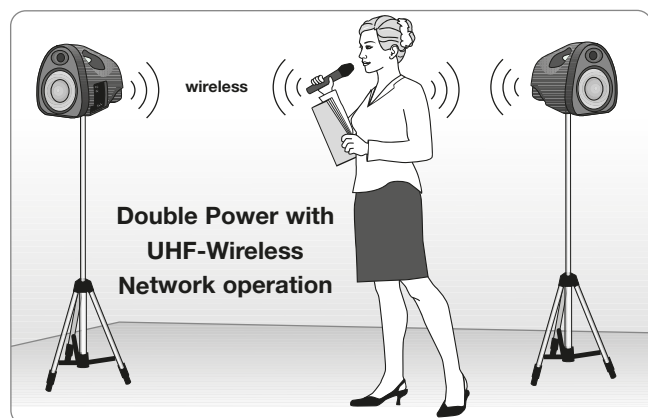
wireless

Technical data	WPP-050 U1/U2
Program power / RMS	50 W / 30 W
Power AC	230 V (mains supply ~19V); 12 V battery, 2.9Ah
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**

POWER-PHONE PORTABLE PA-SYSTEM

Picture shows WPP-050 U2

Volume (wireless 1+2)

Channel switch UHF-Receiver 1+2

DC IN 19V

ON/OFF,
Volume (Master)

Treble / bass control

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.

CE 0681

UHF-Hand Microphone, (16 Frequencies) . . . . **UH-016 B**

UHF-Bodypack (for LA-200 B or HS-200)

Bodypack transmitter for using the microphones LA-200 B 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.

CE 0681

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 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.
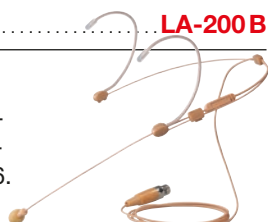
Neckworn Microphone, skin-color. . . . . **HS-200 S**
Neckworn Microphone, black . . . . **HS-200 B**

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. **CB-030**
for POWER-PHONE

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, 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 B**
for up to 2 speaker tripods and 1 mic stand

PORTABLE COMPACT-SYSTEME

R·C·S ®
mobile sound

- Cabaret and small theaters
- trade fairs and exhibitions
- party tents and celebrations
- sports events
- advertising and sports events

<1200 Pers. | Music & Speech | Mains

RCS

PORTABLE COMPACT-SYSTEM PCS-500

COMPACT PA-SYSTEM FOR MOBILE OPERATION

MADE IN GERMANY

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.

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.

★

This system includes the following components:

1x PMX-911R 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-016B/C on page 238)

1x Professional Rack-Flightcase
19″, 10 RU, with rounded corners and 25mm aluminum edge protection

Technical data		PCS-500	
Mixer	Inputs	9x Mic In:	-50dBu
	Inputs CH1-7 (mono)	Line in:	-20dBu
	Inputs CH8-11 (stereo)	Line in: 1x Aux In: 1x Tape In:	-10dBu -10dBu -10dBu
RMS/Program power		3x 300/900W at 4 ohms; 3x 200/300W at 8 ohms	
Speaker		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,	
Microphone Wireless System		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

MADE IN GERMANY

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. Please extract further technical data regarding the individual components from our main catalogue.

★

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 B/C on page 238)

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-600
Mixer	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
	Sound Control Channel		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
Speaker			250W (RMS), 400W (MAX), with Speaker IN/Out; 1,29″ tweeter, 12″ Fullrange
Floor Stand			Aluminium tube Ø 36mm, adjustable 115-200mm,
Microphone Wireless System			UHF 16 frequencies (863-865 MHz), 1-channel
System	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)

RCS

PORTABLE COMPACT-SYSTEM PCS-1200
COMPACT PA-SYSTEM FOR MOBILE OPERATION

MADE IN GERMANY

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 operation. 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 B/C on page 238)

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	
Mixer	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
Speaker		250W (RMS), 400W (MAX), with Speaker IN/Out; 1,29″ tweeter, 12″ Fullrange	
Floor Stand		Aluminium tube Ø 36mm, adjustable 115-200mm,	
Microphone Wireless System		UHF 16 frequencies (863-865 MHz), 1-channel	
System	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)

POWER-MEGAPHONE

R·C·S ®
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 ■

RCS

MEGAPHONE / STORAGE BOX

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 supply	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

Hand Megaphone **HM-012**
Hand Megaphone, with siren **HM-012S**
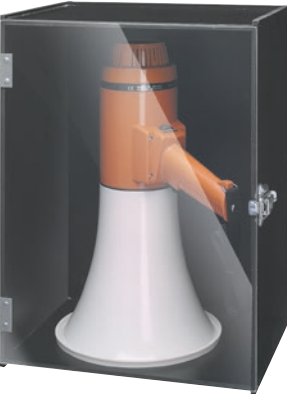
Storage box

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**

„WATERPROOF"-HAND MEGAPHONE

RCS

MEGAPHONE

Hand megaphone max. 25 W

with siren signal

Weight 1,1 kg | Battery | IPX4

Description

The unique water-protected hand megaphones (WHM-series) are designed for security agencies 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-025 S 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 supply	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-025 S: red; ASA-plastic

★

Hand Megaphone, light blue **WHM-025**
Hand Megaphone, red with siren signal . . . . **WHM-025 S**

Storage box

This practical storage box for wall mounting is outstandingly suitable for the safe placement of the megaphones WHM-025 and WHM-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, 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**

HAND- AND SHOULDER MEGAPHONES

MEGAPHONE

Hand Megaphone
max. 25 W

siren signal optional:

Weight 1,6 kg   Battery

Hand Megaphone **HM-025**
Hand Megaphone, with siren signal . . . . **HM-025 S**

Description
Powerful transistor-megaphone with a bundled, impact and scratch resistant horn (ABS).
The chracteristics 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 supply	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:

Weight 2,4 kg   Battery

Shoulder Megaphone **SM-025**
Shoulder Megaphone, with siren signal . . . . **SM-025 S**

Description
Powerful transistor-megaphone with a bundled, impact and scratch resistant horn (ABS).

The chracteristics 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 supply	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

POWER-SHOULDER MEGAPHONE

RCS

**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.

Akku

Battery

Weight
2,5 kg

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 chracteristics of the microphone the feedback noise is extremly well surpressed.

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

operation by car battery
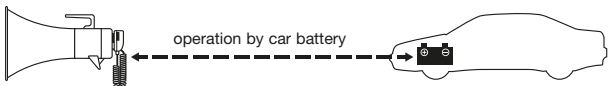
Technical data	SM-040 S
Output-rate	max. 40 W
Power supply	8 Babycells or NiMH rechargeable batteries
Battery lifetime	permanent operation 5 hours
Reach	Outdoors up to 1500 m
Dimensions/Weight	Ø 313 mm, L 435 mm; approx. 2.5 kg (without batteries)
Colour and Materials	ABS, white
Tripod connection	M8 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-040 S**
Delivery: without battery u. charger

Carriage and Storage Case

The case with handle made of sturdy aluminum composite material. Equipment with foam offers enough space for the shoulder megaphone SM-040 S and other accessories.

With edge protection made from robust all-round aluminum frame profile.

Carriage and Storage Case **MK-040**
for SM-040 S with accessories

Nickel-Metal-Hydride Accu-Kit

This product can be equipped with NiMH-Accus and stay in the megaphone while charging.

4500 mAh

Accu-Set **NH-040**

Accu-Charger for NH-040
Special charger for NH-040. Software controlled charging.

Accu-Charger **LG-040**

CONTENTS FOR GOOD TO KNOW

VOICE ALARM SYSTEMS (VAS)   Page

100 V PA-TECHNOLOGY   Page

ABOUT RCS AUDIO-SYSTEMS   Page

R·C·S

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 functionaly and monitoring of evacuation systems are therefore defined in the European norm **IEC 50849.**

MAIN **FEATURES** OF THE RCS SOLUTION
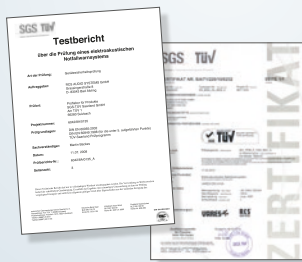
- **EN 54-4 / EN 54-16 / EN 54-24 / IEC 50849 (all certified)**
- According to VDE-0833-4
- Expandable in steps of 8 paging zones to a maximum of 224 zones
- Configuration via PC based software
- Backup of all configuration and setup data
- Up to 24 desktop call stations can be connected
- Speaker lines 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

RCS

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 unmistakeable 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 safe lifes.

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.

HOTEL - FLOOR EVACUATION

Voice evacuation of selected floors in a Hotel.

EVACUATION STATUS AFTER 30 SECONDS

SIREN-ALARM

VOICE-ALARM

TEST-ZONE 2

TEST-ZONE 1
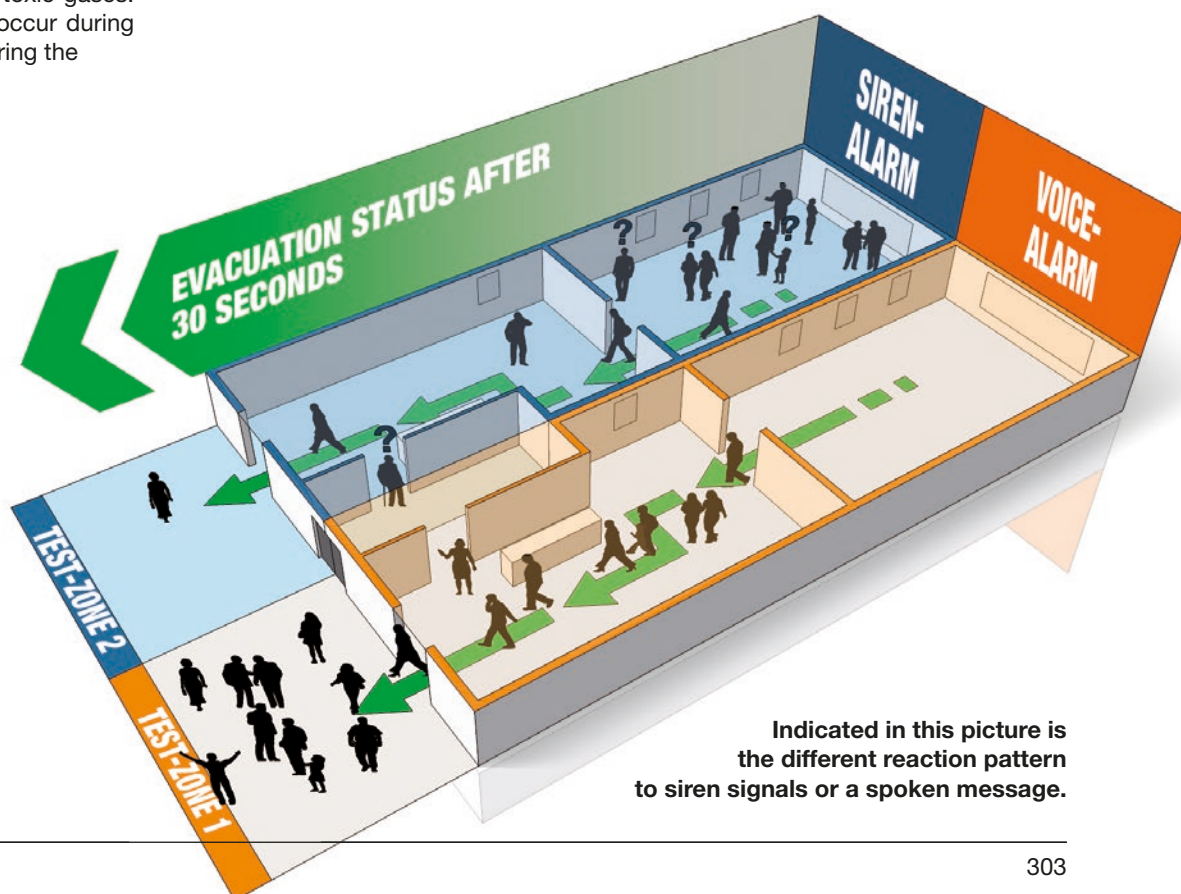
Indicated in this picture is the different reaction pattern to siren signals or a spoken message.

EN 54 FIRE ALARM SYSTEMS

IWhile IEC 50849 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	EN 54-16 Voice alarm control systems	EN 54-24 Loudspeakers for Voice Alarm
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.	Demands on the functionality of a VA system are very similar to IEC 50849. 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.	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 possbilties 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. «
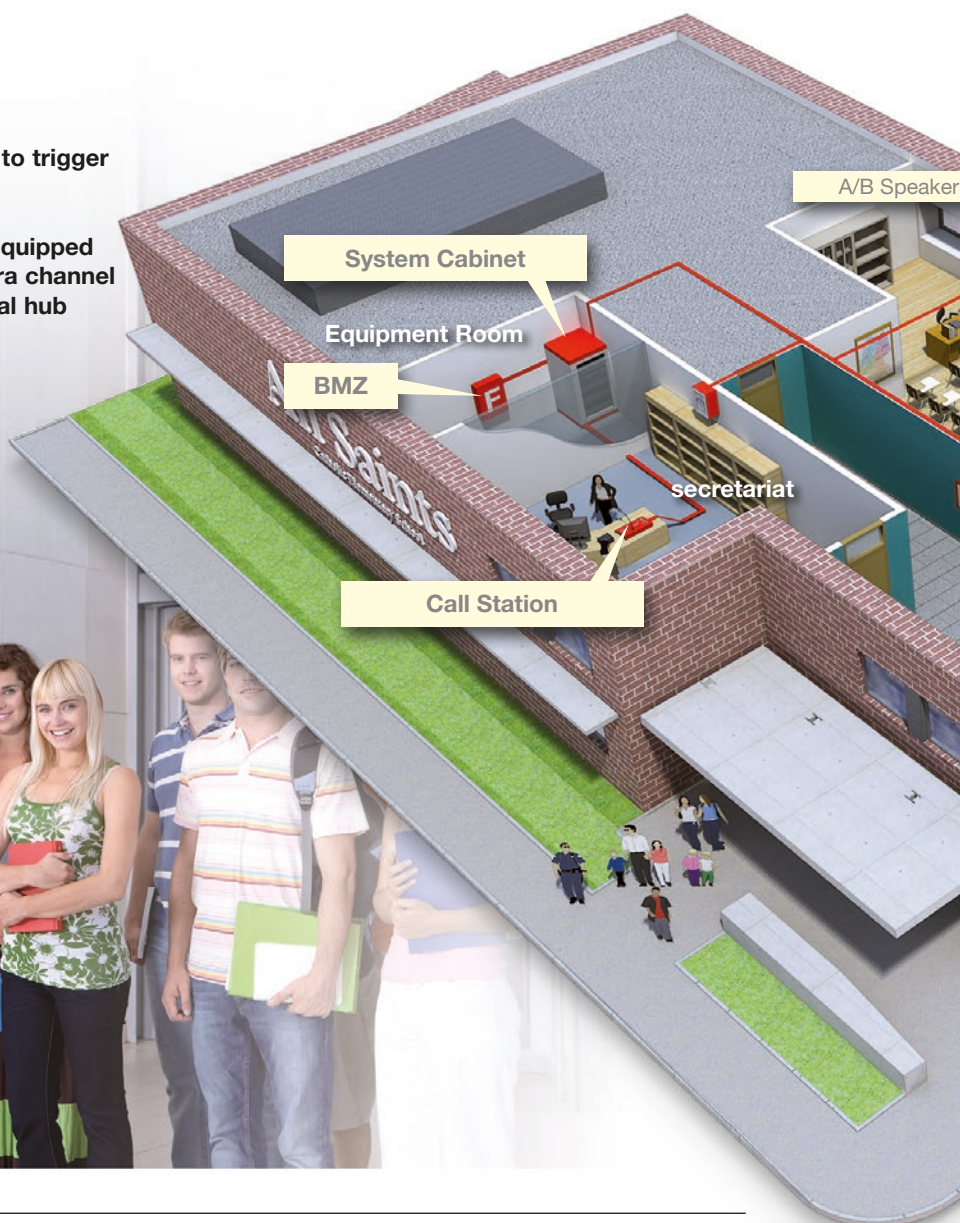
A/B Speaker

System Cabinet

Equipment Room

BMZ

secretariat

Call Station

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 n 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.

A/B Speaker

A/B Speaker

A/B Speaker

Amok-Alarm / Conversation-Unit

class rooms
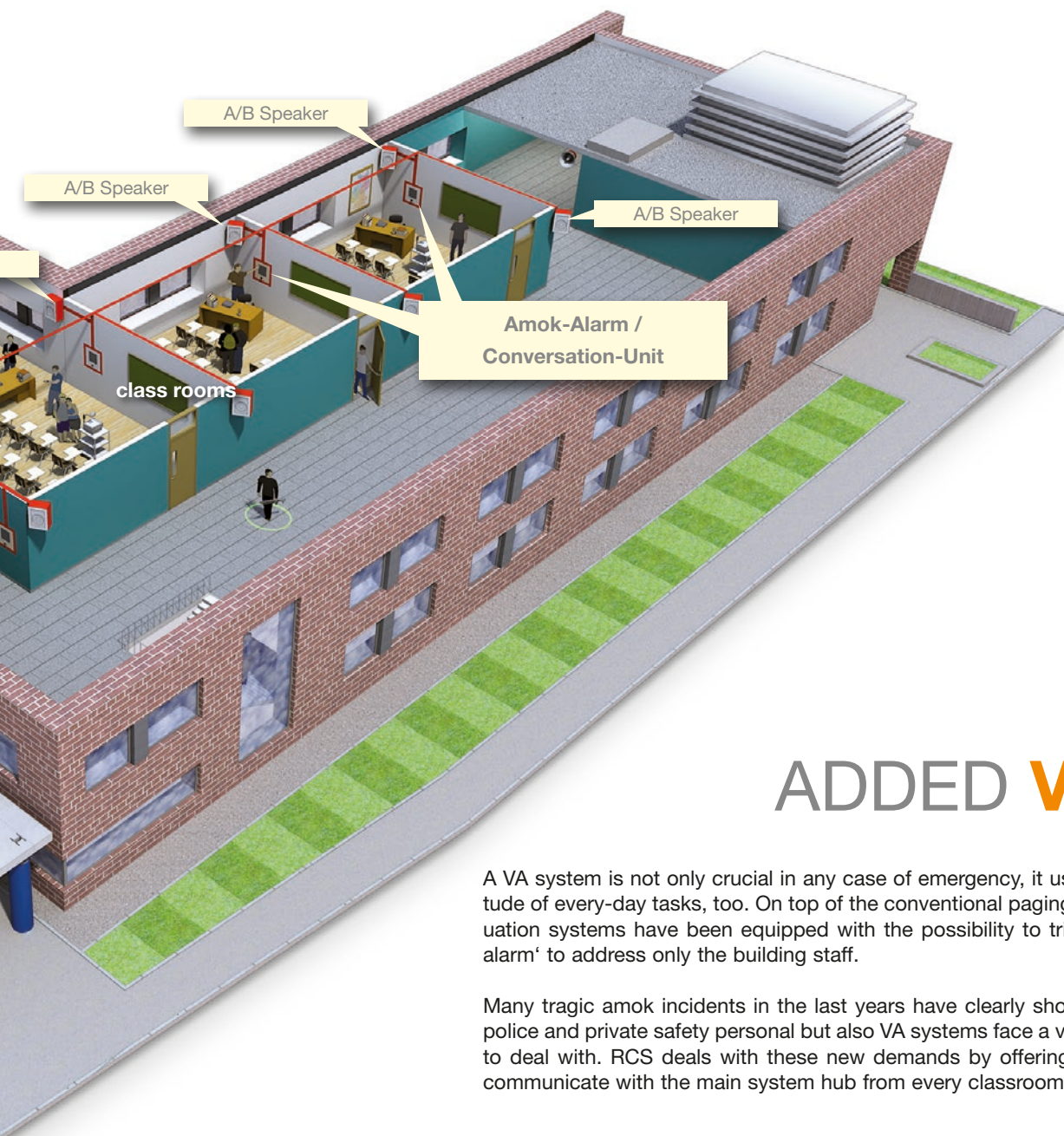
ADDED **VALUE**

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 threads to deal with. RCS deals with these new demands by offering a direct channel to communicate with the main system hub from every classroom.

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.

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 remotley 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.

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 fulfils many important functions of everyday life
For example, the clock controls, the school gong, announcements or the sound of auditorium and sports halls.

»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.

NGRS SYSTEMS

GOOD TO KNOW ABOUT VOICE ALARMS, STANDARDS, 100V TECHNOLOGY AND RCS AUDIO SYSTEMS

RCS

CLASSROOM	TECHNICAL ROOM	PERM. OCCUPIED POST

RAUM 4

Manuel Call Point
(emergency alarm)

Talk back unit

Message from room 4

Message from room 4

PA SYSTEM AS ENS / VAS AND AMOK-ALARM SYSTEM

Notification of emergency messages

ALARMING OF SECURITY FORCES

Intercom station
(for inquiries)

MESSAGE	DETECTION	ALARM

Step 1

Danger situation: The permanently occupied position (secretariat) is informed via a manual call point.

Step 2

Secretariat: The secretary determines from which room the emergency message comes. Through the conversation unit it can be heard from the affected room or it can be spoken to the alarmed person.

Step 3

Consultation: The situation is clarified. Affected persons receive further instructions and be in contact with the secretariat (constantly manned location).

Step 4

Alerting: The necessary task forces are requested by phone (possibly also with a time delay, automatically). There may be alarm texts and live announcements in certain building zones or throughout the building be issued.

SOLUTION VARIOUS PROVIDER

Public address system

Voice alarm system

NGRS / Amok system

By comparison

THE RCS ALL-IN-ONE SOLUTION

One unit for all systems:
+ Voice alarm system
+ Sound system
+ NGRS/ Amok system

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

+ Clock systems and pause signal management

+ Sound system of auditorium, sports and gyms

+ Inductive loop system

STANDARDS SECURE QUALITY

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 50849
Sound systems for emergency purposes

The roots of IEC 50849 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 50849 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.

EN 54-4 certified

EN 54-16 certified

EN 54-24 certified

CERTIFIED SECURITY
ACCORDING TO EN 54

FOR RCS VOICE EVACUATION SYSTEMS AND THEIR COMPONENTS

RCS

EN 54-24 certified — Voice Alarming-Speaker

The RCS voice alarm systems VARES-1000®, VARES-1500®, VARES-2000® 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)

EN 54-16 certified

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)**

EN 54-24 certified

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)**

EN 54-4 certified

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 9001:2015** and **DIN 14675:2020-01**

Mitglied der
Leistungsgemeinschaft
Beschallungstechnik
im ZVEI-Fachverband
Sicherheitssysteme

ZVEI

MADE IN GERMANY

EN 54-16 certified — Voice Evacuation System

EN 54-4 certified — Emergency Power Supply

- 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

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 ✓

RCS

SAA-NETWORK: FLEXIBLE MATRIX SYSTEMS
GOOD TO KNOW ABOUT VOICE ALARMS, STANDARDS, 100V TECHNOLOGY AND RCS AUDIO SYSTEMS

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

LOOP

SYSTEM 4
+ MATRIX
+ DSP
+ LS-LOOP

SYSTEM 3
+ MATRIX
+ DSP

SAA-NETWORK: FLEXIBLE MATRIX SYSTEMS

GOOD TO KNOW ABOUT VOICE ALARMS, STANDARDS, 100V TECHNOLOGY AND RCS AUDIO SYSTEMS

RCS

EN 54-4 certified
EN 54-16 certified
EN 54-24 certified

REMOTE MAINTENANCE
GSM

SYSTEM 1
+ MATRIX
+ DSP
+ FOC

FES

PC

CONFIGURATION
PC-Software

SYSTEM 2
+ MATRIX
+ DSP
+ EOL

EOL

SAAnetwork
FLEXIBLE VOICE ALARM MATRIX SYSTEMS
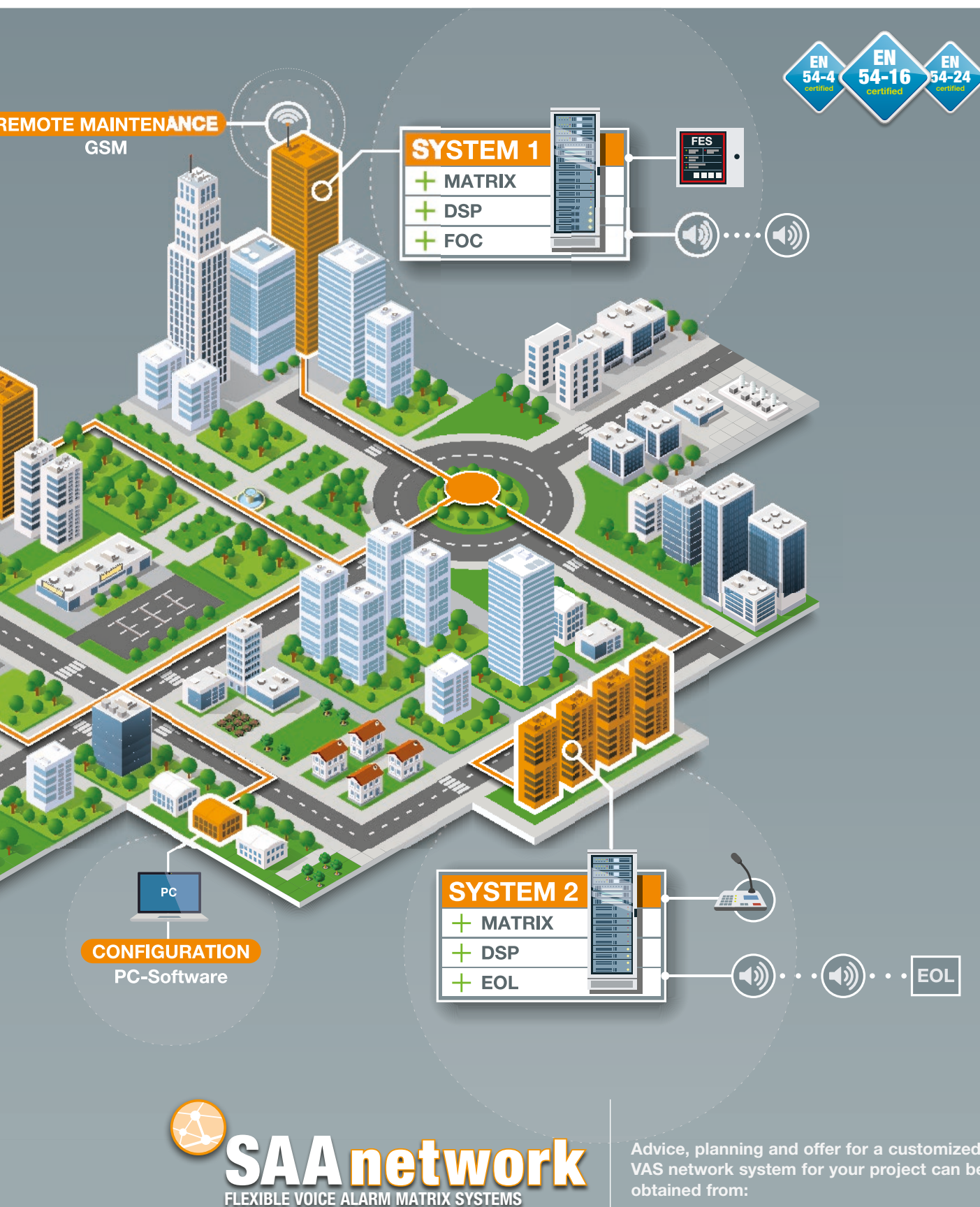
Advice, planning and offer for a customized VAS network system for your project can be obtained from:

+49 8061-3501-0

ENVIROMENT-FRIENDLY
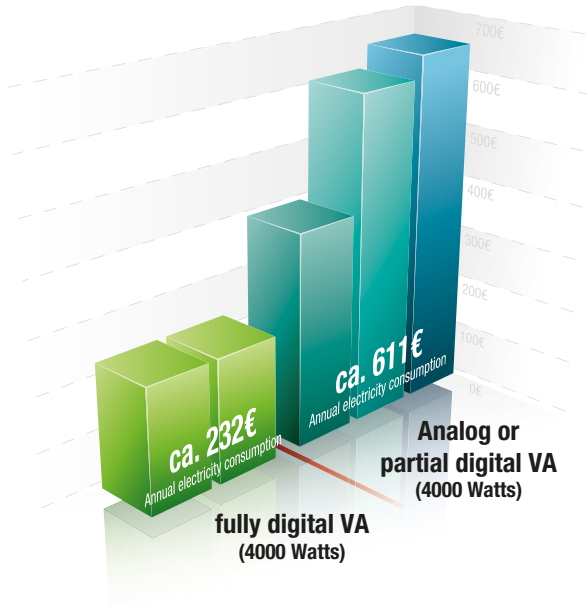
Connected to the fire detection system, a VA unit guards a building every day and every night. Keeping that in mind, our engineers did not rest and optimised RCS system solutions to reach the highest energy efficiency levels. By using this advanced technology, you not only make you contribution to the 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.

ca. 232€
Annual electricity consumption
fully digital VA
(4000 Watts)

ca. 611€
Annual electricity consumption
Analog or partial digital VA
(4000 Watts)

DESIGN AND **ADVANTAGES** OF A **FULLY DIGITAL** VAS

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.**

Digital Alarm Management

Digital Main Clock

Digital Program switch

Digital Amplifier

Digital Amplifier

Digital Spare-Amplifier

Power Distributor

EN 54-4 Power Supply

Batteries
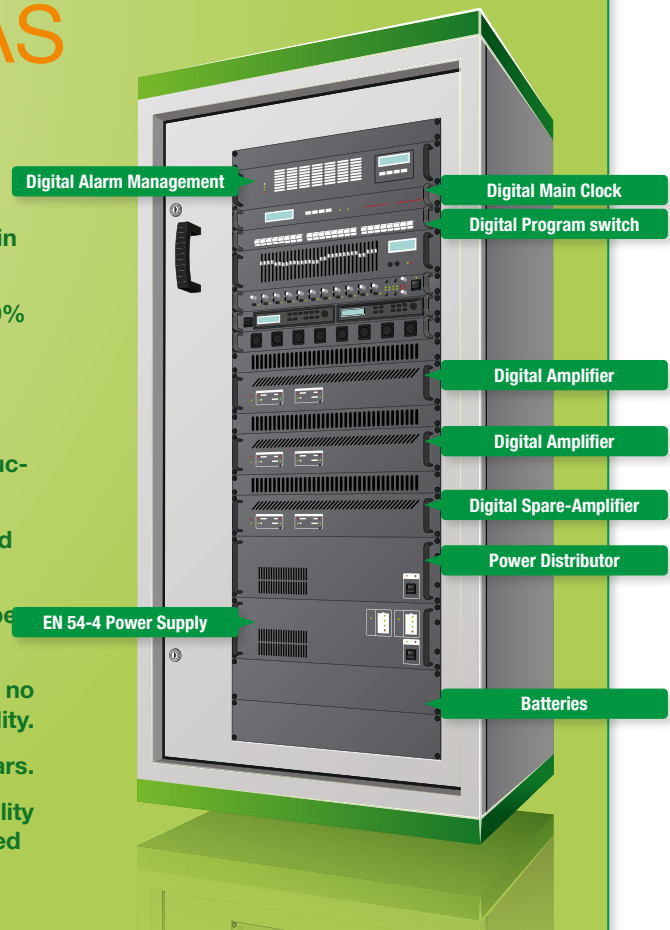
GENERAL INTRODUCTION
INTO THE 100V PA-TECHNOLOGY

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.
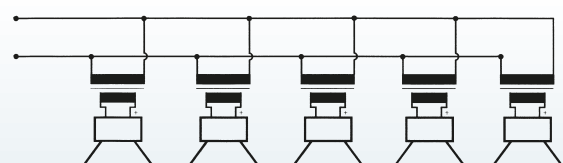
THE ADVENTAGES
OF 100 V PA-TECHNOLOGY:

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.

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TECHNICAL TERMS
OF 100 V 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.

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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.

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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
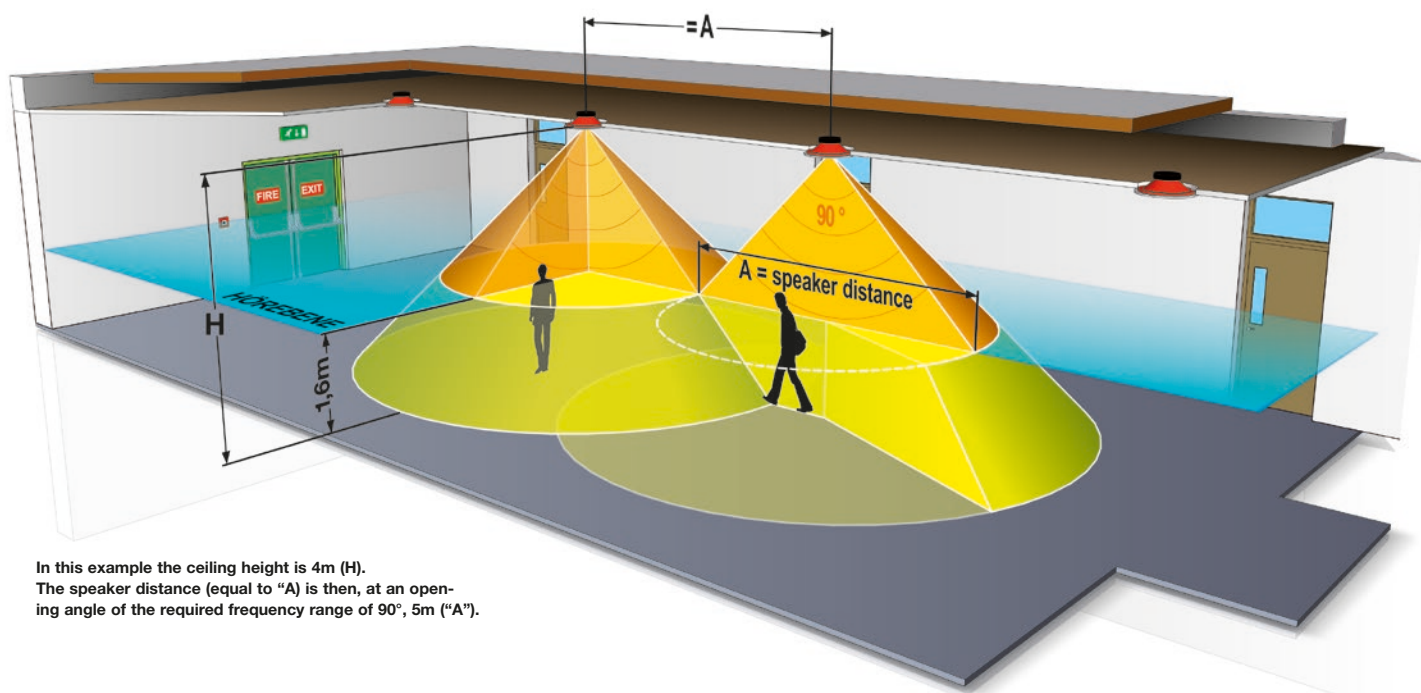
In this example the ceiling height is 4m (H).
The speaker distance (equal to "A") is then, at an opening angle of the required frequency range of 90°, 5m ("A").

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 facilieties).

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.

THE 100 V TECHNOLOGY

GOOD TO KNOW ABOUT VOICE ALARMS, STANDARDS, 100V TECHNOLOGY AND RCS AUDIO SYSTEMS

RCS

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 shielding in a spiral or braided design with a coverage 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 depose 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 100 V systems, 4-pin XLR connectors are to be used in accordance with the standards. The live part (amplifier loudspeaker) is to be routed to sockets and the consumer is to be routed to pins.
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: J-Y(st)Y 2x2x0,8 to 50x2x0,8.
The insert can be a speaker wire, a control line or a signal for the slave clock.

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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 mm²
EWS	JE-H (st)-H 2 x 2 x 0,8 mm²	J-Y(st)-Y 2 x 2 x 0,8 mm²
VAS	JE-H (st)-H 2 x 2 x 0,8 mm²	J-Y(st)-Y 2 x 2 x 0,8 mm²

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 mm²)	RLK-240 (2 x 4 mm²)
Up to 300 Watts of power	RLK-240 (2 x 4 mm²)	RLK-260 (2 x 6 mm²)

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 mm² - X depending on the number of detectors	
VAS	JE-H (st)-H X x 2 x 0,8 mm² - 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 mm²
VAS	JE-H (st)-H 2 x 2 x 0,8 mm²

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 mm² or J-Y(st)-Y 2 x 2 x 0,8 mm² (RED)
VAS	JE-H (st)-H 2 x 2 x 0,8 mm²

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 mm²	JE-H (st)-H 2 x 2 x 0,8 mm²
VAS	JE-H (st)-H 4 x 2 x 0,8 mm²	JE-H (st)-H 2 x 2 x 0,8 mm²

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 mm²
PTM-101 B	CAT 6 / Cat 7 AWG 23	J-Y(st)-Y 4 x 2 x 0,8 mm²
VLM-100	CAT 6 / Cat 7 AWG 23	J-Y(st)-Y 4 x 2 x 0,8 mm²
ELM-106/VLM-106/MXM-104	CAT 6 / Cat 7 AWG 23	J-Y(st)-Y 4 x 2 x 0,8 mm²
ELE-004	J-Y(st)-Y 4 x 2 x 0,8 mm²	JE-H(st)-Y 4 x 2 x 0,8 mm²
DCF-Receiver PRR-077 B	CAT 6 / Cat 7 AWG 23	J-Y(st)-Y 4 x 2 x 0,8 mm²
DCF-Receiver DMF-077/EDCF-77	J-Y(st)-Y 2 x 2 x 0,8 mm²	–

POWER SUPPLY (DEPENDING ON THE REQUIRED POWER CIRCUITS)

Designation	Line	Fuse Type
Each **NEM-230 A/NT-230**	NYM-J 5 x 2,5 mm²	3 C 16
Each **DPD-5622**	NYM-J 3 x 2,5 mm²	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 mm²)	ISL-04 (1 x 4 mm²)
Large loops	ISL-04 (1 x 4 mm²)	ISL-06 (1 x 6 mm²)

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 mm²	J-EH(st)-Y X x 2 x 0,8 mm²
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 mm²) - twisted pair, with braided shield
Double symmetrical cable	ACM-422 (2 x 2 x 0,22 mm²) - 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 or moving parts inside the housing and protection of the equipment against the ingress of solid foreign bodies (contact and foreign body protection).

2. Protection of equipment against ingress of water (water protection).

3. Abbreviations for the internationally agreed types of protection and the degrees of protection..

IP= Shortcut for „international protection":
The protection may be indicated by a sign, which is composed oft he two always constant letter IP and two digits fort he 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
0	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.
1	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.
2	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.
3	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.
4	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.
5	Protection against dust deposits	Complete protection against contact with lice 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.
6	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
0	No protection	No special protection
1	Protection against vertically falling drops of water	Protection against water drops falling vertically must not have any harmful effect.
2	Protection against diagonally falling drops of water	Water drops are falling at any angle of 15° from vertical shall have no harmful effect.
3	Protection against spraying water	The water in any desired angle up to 60° from vertical drops shall have no harmful effect.
4	Protection against splashing water	Water splashed from any direction against the equipment shall have no harmful effect.
5	Protection against water jets	Water jets from a nozzle that is directed from all directions against the equipment shall have no harmful effect
6	Protection against flood	Water allowed temporary flooding as penetrate through heavy seas not in harmful quantities into the equipment. *
7	Protection against immersion	Water may not penetrate in harmful quantities when the equipment is submerged below the specified pressure and time conditions in water. *
8	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.

»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! ««

2015

1983

2009

1977

1980

More than 40 years of experience …

R·C·S

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 100 V 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

Tino Elsner, managing director

TÜV certified
ISO 9001:2015 and **DIN 14675:2020-01**

®
Mitglied der
Leistungsgemeinschaft
Beschallungstechnik
im ZVEI-Fachverband
Sicherheitssysteme

ZVEI:

OUR ADVANTAGES – YOUR BENEFITS

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 ALARM

SERVICE FOR ENGINEERING COMPANIES

Sustainable: ✔

Energy efficiency

Fully digital system technology

Personally: ✔

Support during project planning and planing by project consultant

Safe: ✔

Compliant to standards
Directly from the certified manufacturer

Qualitative: ✔

Made in Germany
Member of LGB in the 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.

OUR DEVISIONS AT A GLANCE

GOOD TO KNOW ABOUT VOICE ALARMS, STANDARDS, 100V TECHNOLOGY AND RCS AUDIO SYSTEMS

R·C·S

PLANNING & DESIGN

Personally. Our project consultants support you in the coherent preparation of planning or project planning through to installation and documentation.
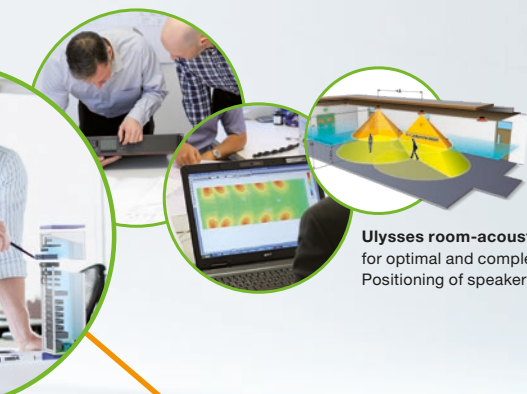
Ulysses room-acoustics simulation for optimal and complete Positioning of speakers.

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

ZVEI:

RCS

Training in small groups in order to learn more and become more familiar with the RCS®-Products.

PASSING ON
OUR EXPERTISE

Company-seminars

Consideration or 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.

Watch the company video

Our Address:

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Gewerbepark Markfeld 5
D-83043 Bad Aibling

Telephone: 8061-3501-0
E-Mail: info@rcs-audio.com

A

AAS-200 A	Amok-Alarm System, (GSM/GPS)		100
AB-200 B	UHF-Antenna-Booster, (1 pair)		242, 244, 246, 248
ABB-400	Storage Box, (for HM-012/S; HM-025/S; SM-025/S; WHM-025/S)		294, 295
ABT-W6	EN 54-24 Alarming-Ceiling Speaker, 6 W, 100 V, white, all-metal		137
ABT-W6 AB	EN 54-24 Alarming-Ceiling Speaker, 2x 6 W, 100 V, white, all-metal		137
ABT-W6 Frame	Flush-Mounting Frame, for ABT-W6/AB	NEW	137
AC-300	Connecting cable, 30 m, (for additional SOUND-CENTER)		274, 278
ACC-050	XLR-Cable, 5 m		235
ACC-054	Cable Jack 3,5 mm on 2x Cinch, 5 m		235
ACC-061	Cable 2x Cinch L/R on 2x Cinch L/R, 3 m		235
ACC-100	XLR-Cable, 10 m		235
ACC-107	Speaker-Cable, 10 m		235
ACC-108/xx	Speaker-Cable, [desired length]		235
ACS-002	Charger-Kit, (for 2 pcs. UBH-016)		252
ACS-008	Charger-Kit, (for 8 pcs. UBR-016 or UBT-016)		252
ACS-020	Charger-Bag, (for 20 pcs. UBR-016 or UBT-016)		252
ACS-040	Charger-Case, (for 40 pcs. UBR-016 or UBT-016)		252
ACT-050/xx BNC	Antenna Cable, [desired length]		244, 248
ACT-050/xx TNC	Antenna Cable, [desired length]		240
AH-200 B	UHF-Antenna-Holder, (1 pair)		242, 244, 246, 248
AH-200 TNC	UHF-Antenna-Holder, (1 pair)		240
AH-300	Antenna-Holder, (for AN-300B)		244, 248
AM-100 BT	BT-Player, (for ME-1A)		129
AM-100 DAB	DAB-Tuner BT/USB/SD-Card Player, (for ME-1A)	NEW	129
AM-100 DV	DVD/CD/USB/SD-Player, (for ME-1A)		129
AM-100 RDS	RDS-Tuner, (for ME-1A)	NEW	129
AM-201 CD	CD-MP3/USB/SD-Card Player Module, (for ME-1A)		129
AN-200 B	External UHF-Antenna		242, 246
AN-300 B	Active Directional Antenna		244, 248
APG-300	Surface-mount housing, (for UPM-300H and UPM-300V)		97
APG-400	Surface-mount housing, (for PWM-101B and UPM-431B)		23, 95
AS-100	Splitter- and Combiner-Set, (1 pair)		244
AS-201 B	UHF-Antenna splitter, 1 RU		242, 246
ATT-100	100V Line Output Attenuator, 5-fold, (for VLA-/VLZ-Series)		133

B

BA-029	Replacement Battery, 2.9 Ah (for WPP-050 U1/U2)		286
BA-035	Replacement Battery Set, 5.4 Ah (for DSC-101/150)		272, 276
BA-052	Lead Acid Battery-Set, for internal operation (26 Ah)	NEW	5, 64
BA-080	Lead Acid Battery-Set, for external operation (45 Ah)		5, 12, 64, 65
BA-140	Lead Acid Battery-Set, for external operation (65 Ah)		12, 63
BA-160	Lead Acid Battery-Set, for external operation (78 Ah)	NEW	12, 63
BA-240 DP	1-Channel-Amplifier, (360/240 W, 2 RU), monitored with FD-21		55
BA-480 DP	1-Channel-Amplifier, (720/480 W, 2 RU), monitored with FD-21		55
BA-2240 DP	2-Channel-Amplifier, (2x 360/240 W, 2 RU)		57
BA-2480 DP	2-Channel-Amplifier, (2x 720/480 W, 3 RU), monitored with FD-21 and FM-30		59
BA-4120 DP	4-Channel-Amplifier, (4x 180/120 W, 3 RU), monitored with FD-21		61
BA-4240 DP	4-Channel-Amplifier, (4x 360/240 W, 3 RU), monitored with FD-21		61
BC-006	Design-Speaker 6 W, 100V		162

EZ-120	Installation Case, (for SC-100 C Series)		**142, 143, 159, 175**
EZ-400	Installation Case, (for SC-400 WT)		**174**

F

FD-21	Pilot Tone-Module, (for Amplifier „DP" and VLZ-Series)		**54, 56, 58, 60, 114**
FI-100	Speaker and transformer moisture proof impregnated		**135**
FM-30	Error Monitoring-Module, (for Amplifier „DP" and VLZ-Series)		**58, 114**
FMX-1202	Audio Mixer, 12 Channels		**77**
FMX-1602	Audio Mixer, 16 Channels		**78**
FS-40	Frequency Shifter Module, (for VLZ-Series)		**114**

G

GFM-300	Electret Boundary Microphone		**231**
GSC-100 A	Conference System Control Unit, (2 RU), digital, for up to 60 Microphone Station	**NEW**	**228**
GSD-101 A	Delegated Station, (1 Button, Slave, for GSC-100 A)	**NEW**	**229**
GSP-102 A	Chairman Station, (2 Buttons, Master, for GSC-100 A) with Priority switch	**NEW**	**229**

H

HM-012	Hand Megaphone		**294**
HM-012 S	Hand Megaphone, with siren signal		**294**
HM-025	Hand Megaphone		**296**
HM-025 S	Hand Megaphone, with siren signal		**296**
HMA-001 G	MCP »Amok alarm«, green		**103**
HMA-001 O	MCP »Amok alarm«, orange		**103**
HMA-001 W	MCP »Notfall«, white		**103**
HMA-001 Y	MCP »Amok alarm«, yellow		**103**
HMG-001	Spare glass insert, (for MCP)		**103**
HMH-001 B	MCP »House alarm«, blue		**103**
HMS-001	Spare Key, (for MCP)		**103**
HP-101 R	100 V Ring Core Transformer (100 W)		**205**
HP-201 R	100 V Ring Core Transformer (200 W)		**205**
HS-020	Headset-Microphone, (for SB-020)	**NEW**	**283**
HS-100	Headset-Microphone, (for VB-200)	**NEW**	**261, 265, 269**
HS-200 B	Headset-Microphone, (for UB-016B/C, UWB-700F), black		**239, 243, 247, … 277, 287**
HS-200 S	Headset-Microphone, (for UB-016B/C, UWB-700F), skin		**239, 243, 247, … 277, 287**
HS-300	Headset-Microphone, (for UBT-016)		**251**
HS-500	Headset-Microphone, (for VB-016)		**281**

I

IM-20	with 20-Ohms Speaker Chassis		**135**
IMD-001 A	Built-in Socket Module RJ-45, (for IMP-612A)		**69**
IMP-612 A	Input Mixing Pre-Amplifier, 19˝ Rack Panel, 2 RU	**NEW**	**69**
ISP-002 A	Phase shifter, for double loop system		**90**
ISV-001 T	Induction Loop Receiver, incl. Headphones		**87, 89**
ISV-300 A	Induction Loop Amplifier, 1 RU, for areas up to 450 m²		**87**
ISV-500 A	Automatic Induction Loop Amplifier, 1 RU, for areas up to 1.000 m²		**89**

MS-201 K	Desktop Microphone, (Jack, balanced)		230
MS-201 X	Desktop Microphone, (XLR, balanced)		230
MT-040 L	100 V Matching Transformer, 4 W		204
MT-061 L	100 V Matching Transformer, 6 W		204
MT-101 L	100 V Matching Transformer, 10 W		204
MT-200 L	100 V Matching Transformer, 20 W		204
MT-310 L	100 V Matching Transformer, 30 W		204
MT-600 S	100 V Matching Transformer, 60 W		204
MU-307 A	Active Monitor Unit, 2 RU		68
MV-030	Desktop Amplifier, 45/30 W		125
MV-060	Desktop Amplifier, 90/60 W		125
MXA-4120 A	4-Channel Mixing Amplifier, 4x 180/120 W, 2 RU, (5 IN / 4 OUT)		47
MXE-400 W	Wall Microphone Station		46
MXM-104	Digital Microphone Station, for Remote control of 4-Speaker lines and „ALL-CALL"		44, 46
MXM-104 WO	Digital Microphone Station, as MXM-104 but without Interface RR-40		44, 46
MXP-604 A	4-Channel Mixing Pre-Amplifier, 2 RU, (6 IN / 4 OUT)		45

N

NC-111	Ambient Noise Controller, 1 RU		76
NCC-005	Crossover-Kabel CAT5e, 0.5 m, (for VARES-1500/2000)	**NEW**	8, 16
NCC-010	Crossover-Kabel CAT5e, 1.0 m, (for VARES-1500/2000)	**NEW**	8, 16
NCC-020	Crossover-Kabel CAT5e, 2.0 m, (for VARES-1500/2000)	**NEW**	8, 16
NCC-030	Crossover-Kabel CAT5e, 3.0 m, (for VARES-1500/2000)	**NEW**	8, 16
NCC-050	Crossover-Kabel CAT5e, 5.0 m, (for VARES-1500/2000)	**NEW**	8, 16
NCC-2000 A	›VARES-2000‹ Network Control-Center, (Audio-Matrix), 1 RU	**NEW**	11
NCE-2000 A	›VARES-2000‹ Network Control-Center Expander, (NCC-2000A Extension), 1RU	**NEW**	11
NDA-200 A	›VARES-1500‹ 2-Channel Backup Amplifier module, 2x 100 W, (NVC series)	**NEW**	5
NDA-200 H	›VARES-1500‹ 2-Channel Backup Amplifier module, 2x 100 W, (NVC series)	**NEW**	5
NDA-1000 A	›VARES-2000‹ Network Digital Power Amplifier, 2x 500 W	**NEW**	12
NEH-100 A	›VARES-1500‹ Extension Housing for DIN rail modules	**NEW**	6
NFM-100 A	›VARES-1500‹ Fireman Microphone, for All Call	**NEW**	7, 13
NFM-200 A	›VARES-1500‹ Fireman Microphone (FES), with Control Panel (DIN 14664)	**NEW**	7, 13
NFM-300 A	›VARES-1500‹ Fireman Microphone, with Control Panel	**NEW**	7, 13
NH-040	Battery Set, (for SM-040/S)		297
NIM-116 A	›VARES-1500‹ Input-/Outputmodule, for monitored inputs and mandatory outputs	**NEW**	6, 15
NLE-406 A	›VARES-1500‹ Line Extension, for further 6 single- or 3 A/B Lines	**NEW**	6, 15
NLF-001	›VARES-2000‹ 19˝ Vent Panel, 1 RU, red	**NEW**	16
NLM-200 A	›VARES-1500‹ End-of-Line Module	**NEW**	6, 15
NLP-001	19˝ Empty Housing, 1 RU, red	**NEW**	16
NLP-002	19˝ Empty Housing, 2 RU, red	**NEW**	16
NLP-003	19˝ Empty Housing, 3 RU, red	**NEW**	16
NOM-204 A	›VARES-1500‹ FO Converter, for Network	**NEW**	6, 15
NPA-150 A	›VARES-1500‹ Network Programming Adapter USB	**NEW**	6, 15
NPC-005	Patchkabel CAT5e, 0.5 m, yellow	**NEW**	8, 16
NPC-010	Patchkabel CAT5e, 1.0 m, yellow	**NEW**	8, 16
NPC-030	Patchkabel CAT5e, 3.0 m, yellow	**NEW**	8, 16
NRC-008 A	›VARES-1500‹ Relay-Outputmodule, 8-fold for GPO, for DIN rail mounting	**NEW**	15
NTM-106 A	›VARES-1500‹ Desktop Microphone, with 6+1 Buttons	**NEW**	7, 13
NTM-124 A	›VARES-1500‹ Desktop Microphone, with Touchscreen	**NEW**	7, 13
NUR-302	Slave Clock, Ø 300 mm, one-sided, analogue		105
NUR-302 DD	Slave Clock, Ø 300 mm, double-sided, analogue, incl. ceiling bracket	**NEW**	105
NUR-302 DW	Slave Clock, Ø 300 mm, double-sided, analogue, incl. wall bracket	**NEW**	105

Q

QDA-428 A	Digital-Amplifier, 2 RU, 4x 700 W (4 ohms) / 4x 400 W (8 ohms), with DSP-		**83**
QRF-210	Pro-Sound Speaker, 220 W, 2-way system		**197**
QRF-212	Pro-Sound Speaker, 250 W, 2-way system		**197**
QRI-108 S	Pro-Sound-Speaker, 200 W, Subwoofer		**199, 201**
QRI-108 ST	Pro-Sound-Speaker, 100 W, 100 V, Subwoofer		**199, 201**
QRI-210	Pro-Sound-Speaker, 350 W, 2-way system		**199**
QRI-210 T	Pro-Sound-Speaker, 100 W, 100 V, 2-way system		**199**
QRI-212	Pro-Sound-Speaker, 350 W, 2-way system		**199**
QRI-212 T	Pro-Sound-Speaker, 200 W, 100 V, 2-way system		**199**
QRI-215	Pro-Sound-Speaker, 500 W, 2-way system		**199**
QRI-215 T	Pro-Sound-Speaker, 200 W, 100 V, 2-way system		**199**
QRI-401	Pro-Sound-Speaker, 50 W, incl. L-shape Wall bracket		**201**
QRI-401 T	Pro-Sound-Speaker, 30 W, 100 V, incl. L-shape Wall bracket		**201**
QRI-402	Pro-Sound-Speaker, 125 W, 2-way system		**201**
QRI-402 T	Pro-Sound-Speaker, 60 W, 100 V, 2-way system		**201**
QRI-404	Pro-Sound-Speaker, 200 W, 2,5-way system		**201**
QRI-404 T	Pro-Sound-Speaker, 60 W, 100 V, 2,5-way system		**201**
QRK-005	Eyebolts Set, (for QRF-Series), contains 5 pcs. eyebolts		**197**
QST-185	Speaker-Stand, up to 1,85 m height		**195, 197, 274, 278**
QWH-035	Wall bracket, (for PB-1210S/W, PB-1220S/W, PRO-1200S/W)		**195**
QWH-050	Wall bracket, (only for QRF-210, QRF-212 and QRF-212M)		**197**
QWH-210 H	Multimount-Holder, for QRI-210/T, horizontal		**199**
QWH-210 V	Multimount-Holder, for QRI-210/T, vertical		**199**
QWH-212 H	Multimount-Holder, for QRI-212/T, horizontal		**199**
QWH-212 V	Multimount-Holder, for QRI-212/T, vertical		**199**
QWH-215 H	Multimount-Holder, for QRI-215/T, horizontal		**199**
QWH-215 V	Multimount-Holder, for QRI-215/T, vertical		**199**
QWH-402	Wall Mounting Bracket, for QRI-402/T, U-Bracket		**201**
QWH-404	Wall Mounting Bracket, for QRI-404/T, U-Bracket		**201**

R

RAB-008 B	19″ Cabinet, 8 RU		**217**
RAB-014 B	19″ Cabinet, 14 RU		**217**
RAB-018 B	19″ Cabinet, 18 RU		**217**
RAB-024 B	19″ Cabinet, 24 RU		**217**
RAB-032 B	19″ Cabinet, 32 RU		**217**
RAB-040 B	19″ Cabinet, 40 RU		**217**
RAF-002	19″ Universal Shelf, 2 RU		**225**
RAF-003	19″ Universal Shelf, 3 RU		**225**
RAU-002	19″ Sliding Shelf, 2 RU		**225**
RBP-100	Base Plate, (for RAB-Series)		**216**
RC-104	Ceiling Speaker, 4 W, 100V		**168**
RC-106	Ceiling Speaker, 6 W, 100V		**168**
RC-110	Ceiling Speaker, 10 W, 100V		**168**
RC-110 C	Ceiling Speaker, 10 W, 100V, 2-way system		**169**
RC-120 C	Ceiling Speaker, 20 W, 100V, 2-way system		**169**
RC-130 C	Ceiling Speaker, 30 W, 100V, 2-way system		**169**
RC-210 A	Snap-In Mount-Ceiling Speaker, 10 W, 100 V		**170**
RC-306	Ceiling Speaker, 6 W, 100 V		**171**

S

SPC-104 F	Speaker Installation Socket, (4-Pol.), female		234
SPC-200 A	Service and Diagnostic PC, for remote configuration of RCS systems	**NEW**	93
SPC-204 M	Speaker-Plug, (4-Pol.), male		234
SPJ-52 WHBS	EN 54-24 Alarming-Double-Direction Soundprojector, 20 W, 100 V		154
SPJ-53 WHBS	EN 54-24 Alarming-Soundprojector, 20 W, 100 V		155
SPL-100 A	LTE option, (for SPC-200 A, Service and Diagnostic-PC)	**NEW**	93
SPW-100 A	WLAN option, (for SPC-200 A, Service and Diagnostic-PC)	**NEW**	93
SRC-606 EN	EN 54-24 Alarming-Ceiling Speaker, 6 W, 100 V, with Plastic cover		138
SRC-612 EN	EN 54-24 Alarming-Ceiling Speaker, 2x 6 W, 100 V, with Plastic cover		139
ST-030	Floor Stand, (for POWER-PHONE)		287
SW-004	Sound Panel Speaker, 4 W, 100V, with „twin-cone"-Chassis		176
SW-006	Sound Panel Speaker, 6 W, 100V, with „twin-cone"-Chassis		176
SW-010	Sound Panel Speaker, 10 W, 100V, with „twin-cone"-Chassis		176
SW-104	Sound Panel Speaker, 4 W, 100V		176
SW-106	Sound Panel Speaker, 6 W, 100V		176
SW-110	Sound Panel Speaker, 10 W, 100V		176
SW-210 C	Sound Panel Speaker, 10 W, 100V, 2-way system		176
SW-220 C	Sound Panel Speaker, 20 W, 100V, 2-way system		176
SW-230 C	Sound Panel Speaker, 30 W, 100V, 2-way system		176

T

TIF-404 C	Telefon Interface, analogue, with 4 change over contacts and all call		101
TP-10 USB	FM/AM Tuner Module, for all Small Centrals with Module compartment or ME-2A		109, 111, 113, … 126, 128
TP-200 IR	DAB Internet-Radio Module, for all Small Centrals with Module compartment or ME-2A	**NEW**	109, 111, 113, … 125, 128
TRA-001 A	›VARES-LOOP‹ Ringbus Termination, (End-of-line module)	**NEW**	32
TRC-800 A	›VARES-LOOP‹ Ringbus Controller, for DIN rail mounting, 1HP (IP-30)	**NEW**	29
TRK-001 A	›VARES-LOOP‹ DC Blocking Capacitor	**NEW**	32
TRP-485 A	›VARES-LOOP‹ Programming Adapter, (RS485 to USB)	**NEW**	32
TRT-200 A	›VARES-LOOP‹ Ringbus Isolator, IP 21C	**NEW**	30
TRT-300 A	›VARES-LOOP‹ Ringbus Module, with 2 relay contacts, IP 21C	**NEW**	33
TRT-400 A	›VARES-LOOP‹ Ringbus Module, with volume control 60W, IP 21C	**NEW**	31
TS-060	Desktop Microphone Stand, with boom arm		232

U

UB-016 B	UHF-Bodypack, 16 Frequencies, (863-865 MHz)		239, 273, 277, 287
UB-016 C	UHF-Bodypack, 16 Frequencies, (620-640 MHz)		239
UB-100 A	USB/SD-Card/BT Player-Module, (for UPM-431B), incl. Remote		95
UBA-002	Battery-Set AAA, 2x NiMH 1,2 V, (for UBR/UBT-016)		252
UBB-002	Battery-Set AA, 2x NiMH 1,2 V, (for UBH-016, VB-200 or VH-200)		252, 261, 265, 269
UBH-016	UHF-Hand Microphone, 16 Frequencies, (863-865 MHz)		251
UBR-016	UHF-Receiver, 16 Frequencies, (863-865 MHz), with Bag		251
UBT-016	UHF-Bodypack, 16 Frequencies, (863-865 MHz), with Bag		251
UH-016 B	UHF-Hand Microphone, 16 Frequencies, (863-865 MHz)		239, 273, 277, 287
UH-016 C	UHF-Hand Microphone, 16 Frequencies, (620-640 MHz)		239
UPG-300	Flush-Mount Housing, (for UPM-300H and UPM-300V)		97
UPG-400	Flush-Mount Housing, (for PWM-101B and UPM-431B)		23, 95
UPG-600	Flush-Mount Housing, (for VPM-6000U)		98
UPM-002 B	Button Module, 2-fold, (for UPM-300H)		97
UPM-300 H	3-Channel Mixer for mounted switch boxes, (horizontale)		97, 189
UPM-300 V	3-Channel Mixer for mounted switch boxes, (verticale)		97, 189

VPM-6000 U	4-Channel Mixing Pre-Amplifier Control Panel, (for VLZ-Series), with USB-Interface		**98**
VS-050 P	All-Call Microphone Station, (for PSC-012A)		**43**

W

WFC-010 U	19″ Angle „U-Flight-Case", 10 RU		**223**
WFC-012 U	19″ Angle „U-Flight-Case", 12 RU		**223**
WFC-015 U	19″ Angle „U-Flight-Case", 15 RU		**223**
WFC-020 U	19″ Angle „U-Flight-Case", 20 RU		**223**
WHM-025	Hand Megaphone, max. 25 W, light blue		**295**
WHM-025 S	Hand Megaphone, max. 25 W, red, with siren		**295**
WPP-050 U1	Wireless POWER-PHONE, 50 W, with integrated 1-Channel UHF-Receiver		**286**
WPP-050 U2	Wireless POWER-PHONE, 50 W, with integrated 2-Channel UHF-Receiver		**286**
WSH-009	19″ Wall Swing Frame Cabinet, 9 RU, with glass door, load capacity up to 100 kg		**221**
WSH-012	19″ Wall Swing Frame Cabinet, 12 RU, with glass door, load capacity up to 100 kg		**221**
WSH-016	19″ Wall Swing Frame Cabinet, 16 RU, with glass door, load capacity up to 100 kg		**221**

X

XES-212 EN SW	Xorva ›E‹ EN 54-24 Speaker, 200 W, 100 V, 2-way system, ball-throwing proof, black **NEW**		**153**
XES-212 EN WS	Xorva ›E‹ EN 54-24 Speaker, 200 W, 100 V, 2-way system, ball-throwing proof, white **NEW**		**153**
XLR-203 F	XLR-Socket, silver, female		**234**
XLR-203 M	XLR-Plug, silver, male		**234**
XLR-503 F	XLR-Installation-Socket, black, female		**234**
XLR-503 M	XLR-Installation-Plug, black, male		**234**
XSS-020	Xorva ›S‹ Speaker, 20 W, passive, 8 ohms, incl. Wall bracket		**191**
XSS-020 T	Xorva ›S‹ Speaker, 20 W, 100 V, incl. Wall bracket		**191**
XSS-040 T	Xorva ›S‹ Speaker, 40 W, 100 V, incl. Wall bracket		**191**
XWH-200 A	Wall bracket, black, for XES-212EN	**NEW**	**152**

Z

ZS-3	Digital Impedance Tester, with Accessories and storage bag		**203**

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