

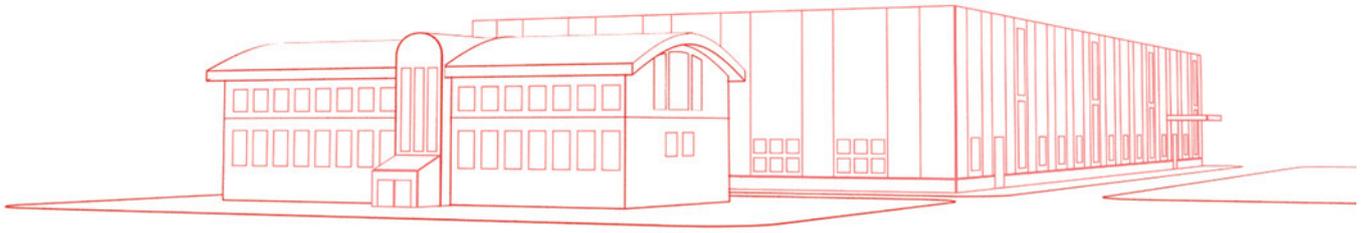
# VOICE ALARM SYSTEMS

## VA/PA



**2022**  
CATALOGUE





# TRIED-AND-TESTED QUALITY FOR A SAFE FUTURE

Detectomat GmbH has a young, dynamic team, which has set itself the target of providing high-quality products to satisfy our customers. The company also believes in being flexible and offering comprehensive customer care.

Detectomat GmbH, which was founded in 1977, has its roots in Niendorf on Germany's Baltic Sea coast and initially focused on producing OEM smoke detectors. After the takeover by the Ahrensburg-based Job Group in 1999 and the integration of DBM Brandmeldetechnik GmbH, a completely new fire alarm series based on numerous patents was developed and produced both for the high-end industrial sector and for the domestic sector.

As a strong innovative part of this corporate group, Detectomat GmbH is an expert developer, producer of fire alarm technology components and comprehensive supplier. Alongside the latest generation of fire detectors, the range now also includes modules, control and indicating equipment, software and more.

Another branch of the company, Detectomat Living GmbH, was founded in 2010 and deals with sales of domestic smoke detectors. In 2017, both companies became affiliated with the French DEF Network based in Massy. Thanks to the synergy in development and expertise with the long-established French company, Detectomat embarked on a new chapter in its company history from 2018.

The DEF Network is a consortium that was established in 1958 by Daniel Lécuyer and has since grown to become Europe's largest independent manufacturer of fire protection system technology. The group is now run by Philippe Lécuyer, the son of its founder.

From the start, management focused on fire alarm technology as the core business, and it markets solid and reliable systems in this field. With its headquarters in France and a strong market presence in ten other countries via its own branch offices, the company is on solid ground.

With the takeover of Simax electronics GmbH by Detectomat Systems in early 2022, the existing product range has been expanded to include voice alarm systems, the position of the company as a manufacturer of high-quality safety products for the fire alarm specialist market has been strengthened, and processes have been tailored to the requirements in Germany.

Coordinating our product development, delivering rapid implementation processes and working towards shared goals are the right way forward for us.

# TWO LOCATIONS ONE SHARED GOAL

## Detectomat & Simax – safety creates trust

The skilled teams at the Ahrensburg and Aachen sites concentrate on research, development, production and sales of future-proof solutions in order to fully satisfy the “Made in Germany” quality commitment.

### What sets us apart?

Our mission is not to achieve what is technologically feasible, but rather what is technologically practical and offers our customers considerable added value. Our system solutions in the areas of fire alarm technology

FWS / FAS and voice alarm systems VA/PA are aimed at customers from a wide range of application areas around the world. Over 100 employees and a strong network with a wide range of technology partners actively contribute to ensuring sustainable fire and personal protection.

Aiming for perfection in this way is just what our customers expect from us. After all, they need to have complete confidence in our products and solutions.

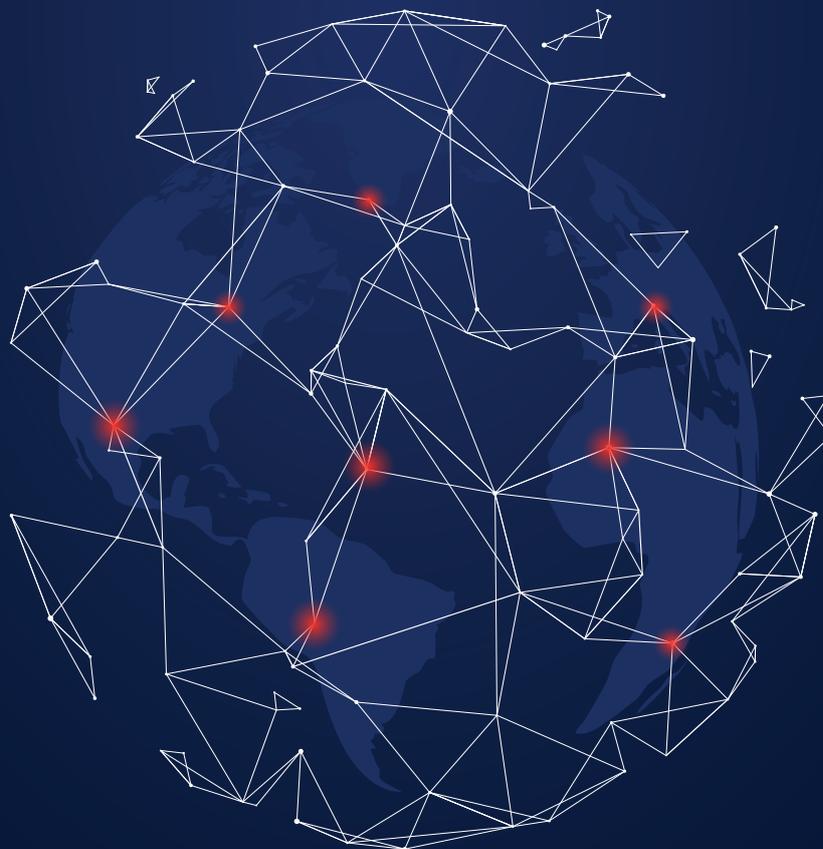


# DEF NETWORK STRATEGY FOR SUCCESS

Detectomat GmbH was established in 1977 and is one of the leading providers in the field of fire detection technology.

As a medium-sized company and part of the DEF Network, one of the largest independent manufacturers of fire protection system technology in Europe, we offer products and services that are built on our many years of experience and our exacting quality standards.

Our product portfolio ranges from individual components right the way up to complex system solutions for the fire alarm technology FWS / FAS and voice alarm systems VA/PA.



# DEF NETWORK: GROWING TOGETHER

## The vision of the network

The DEF Network is an independent, international network of highly specialised companies from the fire protection sector. The Group's products and services cover a wide range of highly complex projects.

## The mission with a safe strategy

In order to achieve the ultimate goal of protecting you and your property against the danger of fire, we provide you with optimum support to ensure that your employees and properties are safe in the long term. In order to achieve the best performance as a team within a network, in the DEF Network there is a joint strategy for growing together, which is based on five principles.



## The five principles for joint success

### Respect and diversity

As employees of a DEF Network company, we are part of the large DEF team and contribute to the success of the entire network. We treat each other with respect and trust so that everyone feels comfortable at work and is free to develop within this environment with equal opportunities irrespective of their origin or gender.

### Simplicity

Genuine and effective cooperation requires open and honest relationships between the company and its employees, based on listening to what the other person has to say.

### Professionalism

We establish trust with the customer through our business experience, through our quality standards, by offering transparency and by meeting our obligations.

### Listening to the customer

Thanks to our ability to listen to the customer and understand what they need, we develop solutions for them and therefore facilitate a long-term partnership.

### Innovation

We promote entrepreneurial freedom, which increases our creativity and capacity for innovation.

# INDIVIDUAL SOLUTIONS FOR EVERY APPLICATION

“A single source **for market-driven solutions**” ...



**simax**  
by Detectomat



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You can find all products from the  
**voice alarm system VA/PA**  
product line here.



... this is our long-term strategy and our offering for all planners, installers and building operators who want to place their trust in reliable, effective collaboration in the field of fire protection systems technology.

DETECT  MAT



You can find all products from the **fire alarm system FWS / FAS** product line here.



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# VOICE ALARM AND EVACUATION SYSTEM MOSES VA/PA



**The modular system** for future-proof solutions.

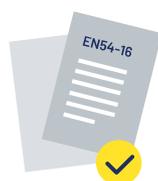
# TARGETED INFORMATION – SAFE EVACUATION

**Modular voice alarm** and evacuation system  
MOSES VA/PA.



### Maximum flexibility

Modular and perfectly coordinated system components paired with the simaxCONFIG for diverse applications, individual system functions and high safety requirements.



### Certified to EN54-16

The MOSES system satisfies the requirements of product standard EN54-16, which stipulates functions such as continuous self-monitoring of the system, including signal paths and speaker lines up to the microphone of the call stations.

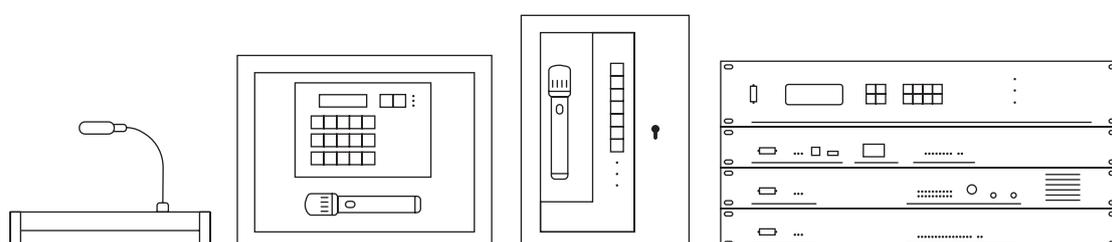


### Made in Germany

This statement has always been a promise of high quality standards, but that's not all – it also represents clear understanding and optimum implementation of fire and voice alarm systems in accordance with the national requirements, guidelines and applicable standards.

# THIS IS THE WAY! CLEAR ANNOUNCE- MENTS – SUPERIOR SAFETY

**Perfectly coordinated components**  
for diverse applications.



# COMPACT SAFETY AT A GLANCE

The **modular system** for small buildings all the way up to complex systems and connection to fire alarm control panels as per DIN VDE 0833-4.

Tried and tested  
Simax  
quality

Controller **SAZ02**

Backup management **DHU0802**

Line monitoring **DLC16**

Digital interface unit **DIU**

Power amplifier **SPA 2-500**

**Modular compact system**  
Components can be flexibly added and upgraded for a future-proof solution. Redundant functions and a high-performance disaster power amplifier management system ensure that high requirements are met.

## ! The key functions at a glance

- Up to 8 controllers in the certified network via RS 485, ETH or FOC (max. 8,192 lines)
- Data interface to Detectomat fire alarm control panel via ETH, contact interface for all makes (64 monitored inputs, phased evacuation)
- Backup power amplifier management
- Modern class D power amplifier from 250 watts up to 2 x 500 watts
- Easy system configuration using Windows software simaxCONFIG (TCP-IP, including remote)
- Freely programmable logic functions for virtual control functions

# IMPORTANT ANNOUNCEMENT

## CALL STATIONS

The **digital call station systems** are used for live paging, playback of individual voice messages and audio data, and for diverse control tasks in the modular voice alarm and evacuation system MOSES.



### The key functions at a glance

- Modular call stations and fire brigade call stations with display
- Option of redundant connection to controller
- Up to 210 freely programmable keys per call station
- Feedback reduction or delayed call output for each call station
- Stereo music input for each call station
- DIN 14664-compliant fire brigade call station available
- Easy migration into existing cable networks (4 x 2 x 0.8 mm, max. 1000 m)
- Individual solutions e.g. for installing a fire brigade call station

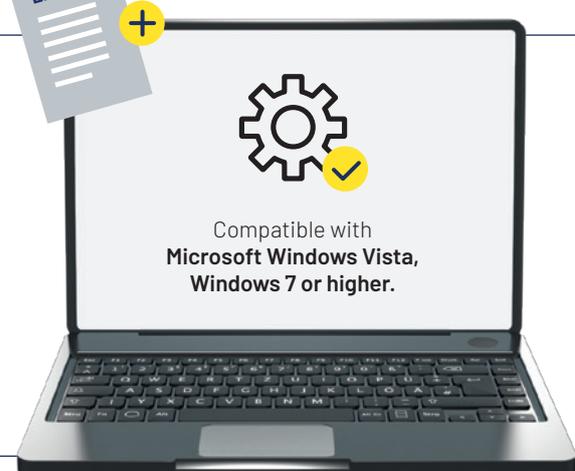
# THE SYSTEM GIVES YOU CONTROL!

## SIMAXCONFIG

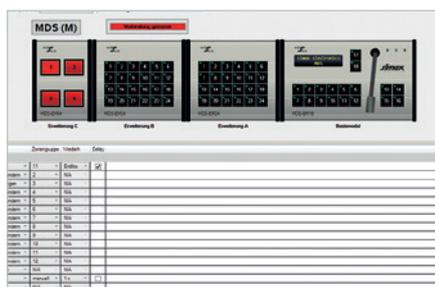
The PC software tool for configuring and controlling hardware modules in the MOSES system.

- Program interface has an organised structure
- Logically assigned functions
- Intuitive operation
- Easy configuration and control of the hardware modules
- Quick commissioning
- Update options for future-proof upgrades
- All connected components can be configured from the SAZ02

**Software licence**  
Variable function scope

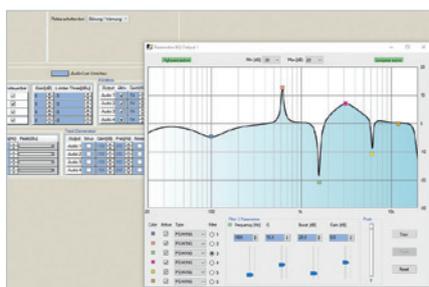


Compatible with  
**Microsoft Windows Vista,  
Windows 7 or higher.**



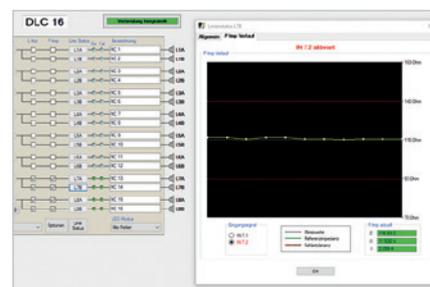
### Call station key assignment

The freely configurable function keys of the call stations can be assigned different functions such as alarm start/stop, call zone numbers or selection of an external music source.



### Configuration and control

The software tool is used to configure all zone groups, speaker lines, monitored call stations or I/O modules with freely configurable function contacts and individual time or special functions, as well as the built-in audio DSP.



### Speaker line and power amplifier management

With simaxCONFIG, the digital line monitoring DLC16 can be displayed and configured in all parameters in real time. This simplifies commissioning, servicing, documentation and troubleshooting. The function of the digital disaster manager DHU0802 can also be configured in this way.

# THE VOICE ALARM SYSTEM IN ACTION

## AREAS OF APPLICATION

**Acoustic information** with wide coverage.

Voice alarm systems are normally used in areas and buildings where large numbers of people are present and elevated safety requirements apply.

Clear, rapidly delivered acoustic information in a hazard situation is defined in the standard DIN VDE 0833-4 "Requirements for voice alarm systems in case of fire". The primary objective in such situations is to provide targeted information to people at risk, both indoors and outdoors, in order to prevent a panic situation.

An ordered sequence of actions, such as the evacuation of a building or individual floors, is organised via the voice alarm system. The voice alarm can make use of automated processes with preconfigured messages, as well as live paging by trained personnel or the emergency services.

In addition to offering maximum safety, the MOSES system can also be used for other sound broadcasting tasks, such as background music or company announcements, conveniently and with optimum quality.





Digital voice alarm control panel of the modular voice evacuation system MOSES

## PRODUCT INFORMATION

- 4 audio paths with digital 24 bit signal processing
- Max. 96 zones and 960 speaker lines
- Intermediate storage of announcements
- 40 freely configurable audio files on SD card
- Up to 8 microphone units and 60 peripheral modules
- Monitored I/O interface for connection of the BMA
- I/O interface with freely configurable function contacts
- Detailed error logging with time stamp
- Convenient evaluation via PC
- Configurable logging for announcements, errors and alarm events
- Management of up to 96 sound zones
- 2 stereo music inputs on the control panel and one stereo music input each on the microphone units
- 96 individual special functions at programmable times
- Internal pilot tone generator for monitoring the audio paths
- Filter, limiter and feedback suppression
- Remote maintenance via Ethernet / Internet
- Configuration via PC software simaxconfig
- Part of the EN54-16 certification

## TECHNICAL DATA

Dimensions (H x W x D)	19", 1U, 170mm depth plus connector plug
Weight	500 g
Material	Anodized aluminum
Color	black
Input Voltage Range	21,6 V – 30 V DC
Operation Voltage	24V DC



Digital voice alarm control panel of the modular voice evacuation system MOSES, can be networked via SAZNET

## PRODUCT INFORMATION

- 4 audio paths with digital 24 bit signal processing
- Max. 96 zones and 960 speaker lines
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- 96 individual special functions at programmable times
- Internal pilot tone generator for monitoring the audio paths
- Filter, limiter and feedback suppression
- Remote maintenance via Ethernet / Internet
- Configuration via PC software simaxconfig
- Networking of up to 8 central processing units via SAZNET - copper / Ethernet / fiber optics
- Part of the EN54-16 certification

## TECHNICAL DATA

Dimensions (H x W x D)	19", 1U, 170mm depth plus connector plug
Weight	500 g
Material	Anodized aluminum
Color	black
Input Voltage Range	21,6 V – 30 V DC
Operation Voltage	24V DC

DISPLAY-INTERFACE-UNIT

MOSES-DIU

Art no.: 37002

PRODUCT INFORMATION

- 16 digital inputs with freely configurable functions
- 6 message outputs, freely configurable
- Extension by up to 64 additional inputs with slave modules MIO-S
- LCD display and 3 LEDs as well as acoustic warning signal
- 4 buttons for operating the display menu
- The function of 8 additional buttons can be configured
- 1 microphone and 2 line inputs for call or music signals
- Part of the EN54-16 certification



TECHNICAL DATA

Dimensions (H x W x D)	19", 2U, 50mm Depth + Connectors
Weight	660 g
Material	Aluminum anodized
Color	black
Input Voltage Range	21,6 V – 30 V DC
Current Consumption	110 mA
Operation Voltage	24V DC

Display interface unit

SLAVE CARD WITH 8 INPUTS FORDIU OR MIO-M

MIO-S

Art no.: 37040

PRODUCT INFORMATION

- 8 inputs for alerting up to 48 broadcast zones
- Connection of each slave input as a switch, quiescent current or limit value monitoring
- 8 potential-free, invertible relay outputs per slave module for feedback of active inputs
- MIO systems can be extended to up to 64 inputs and outputs
- Signalling of operating and fault states via 10 status LEDs
- Part of the EN54-16 certification



TECHNICAL DATA

Dimensions (H x W x D)	W: 129 mm, D: 82 mm
Weight	100 g
Current Consumption	125 mA
Operation Voltage	24 V DC

Slave card with 8 inputs for DIU or MIO-M

BASIC MODULE WITH ELECTRET MICROPHONE, DISPLAY AND 18  
BUTTONS

MOSES-BM18

Art no.: 37003



Basic module with electret microphone, display and 18 buttons MOSES

## PRODUCT INFORMATION

- Basic module with microphone, display and 18 buttons
- Stereo input for connecting music sources
- All button functions are freely configurable
- Visual and acoustic signalling of operating and fault states
- Microphone monitoring with immediate fault message to the system if the microphone fails
- Recording option on call to avoid feedback
- Compressor and limiter
- Simple configuration of the call station via PC software
- Serial bus connection: RS 485 / RJ-45 socket
- Part of the EN54-16 certification

## TECHNICAL DATA

Dimensions (H x W x D)	270mm/64mm/164mm
Weight	1.200 g
Material	Anodised aluminium
Color	silver
Current Consumption	260 mA
Operation Voltage	24V DC

EXTENSION MODULE WITH 24 BUTTONS FOR THE MODULAR  
DIGITAL CALL STATION MOS

MOSES-EM24

Art no.: 37004



Extension module with 24 buttons for the modular digital call station MOSES-BM18

## PRODUCT INFORMATION

- Extension module with 24 buttons
- Part of the EN54-16 certification

EXTENSION MODULE WITH 4 BUTTONS FOR THE MODULAR DIGITAL CALL STATION MOSES

MOSES-EM04

Art no.: 37005

PRODUCT INFORMATION

- Extension module with 4 red alarm buttons with cover
- Part of the EN54-16 certification



Extension module with 4 buttons for the modular digital call station MOSES-BM18

MODULAR FIRE BRIGADE CALL STATION WITH DISPLAY

MOSES-MFWS

Art no.: 37006

PRODUCT INFORMATION

- High-quality handheld microphone with talk button and retention strap
- Lockable housing
- Basic module with display and 7 buttons
- Modular structure with up to 17 buttons
- All button functions are freely configurable
- Microphone monitoring with immediate fault message to the system if the microphone fails
- Compressor and limiter
- Simple configuration of the call station via PC software
- Serial bus connection: 2 x RS 485 / screw terminal block
- Part of the EN54-16 certification



Modular fire brigade call station with display MOSES

TECHNICAL DATA

Dimensions (H x W x D)	350mm/265mm/107mm
Weight	5.100 g
Color	red
Current Consumption	150 mA
Operation Voltage	24 V DC

EXTENSION MODULE WITH 5 BUTTONS FOR THE MODULAR FIRE  
BRIGADE CALL STATION

MOSES-MFWS-EM05

Art no.: 37007

## PRODUCT INFORMATION

- Part of the EN54-16 certification



Extension module with 5 buttons for the modular fire  
brigade call station MFWS MOSES

## DIGITAL FIRE BRIGADE CALL STATION WITH PROFILE CYLINDER

MOSES-FWDSP-PZ

Art no.: 37009



Digital fire brigade call station with profile cylinder  
MOSES

## PRODUCT INFORMATION

- Lockable housing, profile half cylinder
- 6 freely assignable buttons with built-in LED status displays (alarms / call groups)
- Acknowledgement button for acoustic fault signal
- Separate alarm signal can be saved for each alarm group
- Display of the operating states and faults in the call station system via visual and acoustic signals
- Microphone monitoring with immediate fault message to the system if the microphone fails
- Compressor and limiter
- Simple configuration of the call station via PC software
- Basic volume of the microphone adjustable via a trimmer
- Serial bus connection: RS 485 / RJ-45 socket or terminal block
- Part of the EN54-16 certification

## TECHNICAL DATA

Dimensions (H x W x D)	200mm/300mm/5mm
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Weight	1.900 g
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Color	red
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Current Consumption	50 mA
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Operation Voltage	24 V DC
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Remarks	
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## POWER AMP MANAGEMENT FOR UP TO 10 POWER AMPS

MOSES-DHU

Art no.: 37010



## PRODUCT INFORMATION

- 4 balanced AF inputs
- Max. 8 line amplifiers
- Max. 2 backup amplifiers
- Dynamic routing of the AF inputs to the 8 usage amplifier channels
- Integrated monitor speaker with level control and channel selection buttons
- Input signals can be forwarded to an additional DHU0802
- 4 digital fault outputs
- 1 group fault relay
- 23 LEDs to display the system status
- Simple configuration of the DHU via PC software
- Part of the EN54-16 certification

## TECHNICAL DATA

Dimensions (H x W x D)	19", 1HU, 170 mm depth plus connector
Weight	1.400 g
Material	Anodised aluminium
Color	Black
Current Consumption	180 mA
Operation Voltage	24 V DC

Power amp management for up to 10 power amps  
MOSES

## DIGITAL LINE MONITOR / CONTROLLER

MOSES-DLC16

Art no.: 37011



## PRODUCT INFORMATION

- Fault monitoring of up to 16 connected 100 volt-speaker lines
- 8 channels, each with 2 outputs for speaker lines (A + B)
- Permanent monitoring optionally via line impedance and/or pilot power impedance measurement
- Monitoring when switching on with EOL module
- Up to 8 additional DLC16 modules on a DLC16 master via slave bus
- 3 configurable digital control inputs
- 4 configurable digital control outputs
- 1 group fault relay
- Part of the EN54-16 certification

## TECHNICAL DATA

Dimensions (H x W x D)	19", 1HU, 225 mm depth plus connector
Weight	2.000 g
Material	Anodised aluminium
Color	Black
Current Consumption	100 - 230 mA
Rated Voltage	24 V DC

Digital line monitor / controller MOSES

DIGITAL RELAY CARD FOR MACHINE RAIL INSTALLATION WITH 24  
POWER RELAYS

MOSES-DRK24

Art no.: 37013



## PRODUCT INFORMATION

- 24 configurable relays (2 changeover contacts each)
- Individual use of single relays for speaker lines or switching functions
- Functions can be linked via logic elements
- A digital input for mandatory measurement using digital line monitors
- Two digital outputs, configurable like relay functions
- Two potential-free changeover contacts for fault messages (1 x NO contact and 1 x NC contact)
- Status LEDs for each relay
- Two system bus status LEDs
- Load capacity of the digital outputs: 30 VDC / 80 mA (open collector)
- Load capacity of the relay AC: 230 VAC / 8 A (per relay)
- Load capacity of the relay DC: 30 VDC / 8 A (per relay)
- Part of the EN54-16 certification

## TECHNICAL DATA

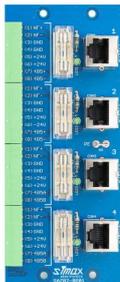
Dimensions (H x W x D)	W: 288 mm, D: 117 mm
Current Consumption	20 - 550 mA
Operation Voltage	24 V DC

Digital relay card for machine rail installation with 24 power relays MOSES

## SAZ02 CONNECTION BACKPLANE FOR 4 CALL STATIONS

SAZ02 BACKPLANE

Art no.: 37014



## PRODUCT INFORMATION

- Part of the EN54-16 certification

SAZ02 connection backplane for 4 call stations MOSES

MOSES FIBER OPTIC MANAGED RING SWITCH, 6 X TX, 2 X FX,  
MULTIMODE

MOSES LWL MM

Art no.: 37043

MOSES fiber optic managed ring switch, 6 x TX, 2 x FX,  
multimode, redundant power supply.

PRODUCT INFORMATION

- Ring functionality based on the Media Redundancy Protocol according to IEC 62429 (MRP-Ring)
- Web Management GUI
- Two alarm relay outputs for system event
- Temperature range from -40 °C to +55 °C
- Auto-negotiation, MDI/MDI-X
- redundant power supply

TECHNICAL DATA

Dimensions (H x W x D)	145 x 70 x 130 mm
Weight	850 g
Material	stainless steel, powder coated
Input Voltage Range	12 VDC to 60 VDC
Capacity Consumption	8 watts

MOSES FIBER OPTIC MANAGED RING SWITCH, 6 X TX, 2 X FX,  
SINGLEMODE

MOSES LWL SM

Art no.: 37044

MOSES fiber optic managed ring switch, 6 x TX, 2 x FX,  
singlemode, redundant power supply.

PRODUCT INFORMATION

- Ring functionality based on the Media Redundancy Protocol according to IEC 62429 (MRP-Ring)
- Web Management GUI
- Two alarm relay outputs for system events
- Temperature range from -40 °C to +55 °C
- Auto-negotiation, MDI/MDI-X
- redundant power supply

TECHNICAL DATA

Dimensions (H x W x D)	145 x 70 x 130 mm
Weight	850 g
Material	stainless steel, powder coated
Input Voltage Range	12 VDC to 60 VDC
Capacity Consumption	8 watts

DIGITAL RELAY CARD FOR MACHINE RAIL INSTALLATION WITH 12  
POWER RELAYS

MOSES-DRK12

Art no.: 37035

Digital relay card for machine rail installation with 12 power relays

## PRODUCT INFORMATION

- 12 configurable relays (2 changeover contacts each)
- Individual use of single relays for speaker lines or switching functions
- Functions can be linked via logic elements
- A digital input for mandatory measurement using digital line monitors
- Two digital outputs, configurable like relay functions
- Two potential-free changeover contacts for fault messages (1 x NO contact and 1 x NC contact)
- Status LEDs for each relay
- Two system bus status LEDs
- Load capacity of the digital outputs: 30 VDC / 80 mA (open collector)
- Load capacity of the relay AC: 230 VAC / 8 A (per relay)
- Load capacity of the relay DC: 30 VDC / 8 A (per relay)
- Part of the EN54-16 certification

## TECHNICAL DATA

Dimensions (H x W x D)	W: 288 mm, D: 117 mm
Current Consumption	20 - 270 mA
Operation Voltage	24 V DC

FIRMWARE EXTENSION / ACTIVATION OF MOSES SAZ02 ON MOSES  
SAZNET

MOSES-FIRMWARE SAZ-NET

Art no.: 37015

Firmware extension / activation of MOSES SAZ02 on MOSES SAZNET

## FIRMWARE EXTENSION MDS-BM18

MOSES-FIRMWARE-GATEWAY BM18

Art no.: 37016

Firmware extension MDS-BM18 MOSES

## INSTALLATION KIT FOR BUILT-IN CALL STATION FOR MDS BM18

19" EINBAUSATZ MDS BM18

Art no.: 37046

Installation kit for built-in call station for MDS BM18

## PRODUCT INFORMATION

- for 19" installation of the MDS BM18

INSTALLATION KIT FOR BUILT-IN CALL STATION FOR MDS BM18 + EM04	19" MDS BM18+EM04
<b>Art no.: 37047</b>	

Installation kit for built-in call station for MDS BM18 + EM04	<p><b>PRODUCT INFORMATION</b></p> <ul style="list-style-type: none"> <li>for 19" installation of the MDS BM18 + EM04</li> </ul>
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INSTALLATION KIT FOR BUILT-IN CALL STATION FOR MDS BM18 + EM04 + EM24	19" MDS BM18+EM24+EM04
<b>Art no.: 37048</b>	

Installation kit for built-in call station for MDS BM18 + EM04 + EM24	<p><b>PRODUCT INFORMATION</b></p> <ul style="list-style-type: none"> <li>for 19" installation of the MDS BM18 + EM04 + EM24</li> </ul>
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PANEL INSTALLATION SET MDS BM18	MDS BM18
<b>Art no.: 37049</b>	

for panel installation of the MDS BM18

PANEL INSTALLATION SET MDS BM18 + EM04 / EM24T	MDS BM18 + EM04/ EM24T
<b>Art no.: 37050</b>	

Panel installation set MDS BM18 + EM04 / EM24T	<p><b>PRODUCT INFORMATION</b></p> <ul style="list-style-type: none"> <li>for panel installation of the MDS BM18 + EM04 / EM24T</li> </ul>
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EBST MDS BM18-EM24	EBST MDS BM18-EM24
TABLEAU INSTALLATION SET BM18-EM24	
<b>Art no.: 37051</b>	

EBST MDS BM18-EM24	<p><b>PRODUCT INFORMATION</b></p> <ul style="list-style-type: none"> <li>16 inputs and outputs controllable via RS232</li> </ul>
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Tableau installation set BM18-EM24

**TECHNICAL DATA**

Dimensions (H x W x D)	Module 3U, 7HP, depth 160mm
Material	Anodized aluminum
Color	Black
Operation Voltage	24 V DC

## VOICE ALARM CONTROL PANEL

SAZ01

Art no.: 37017



## PRODUCT INFORMATION

- Up to 48 call and programming zones
- Up to 6 call stations / I/O cards
- Internal pilot-power generator
- 3 stereo inputs for programming/music installation
- 3 advance level controls for the programming/music inputs
- 2 master level controls for music signal and call signal
- 2 x bass and treble equalisation for music signal and call signal
- 5 balanced audio outputs:
- 2 x call/alarm AF (optional with pilot power)
- 2 x programming/music AF (optional with pilot power)
- 1 x pilot power AF
- 6 digital function outputs
- 1 monitored fault message input
- 1 potential-free fault message contact (changeover contact)
- 1 potential-free alarm message contact (changeover contact)
- Part of the EN54-16 certification

Voice alarm control panel SAZ01

## TECHNICAL DATA

Dimensions (H x W x D)	19", 1HU, 170 mm depth plus connector
Weight	1.200 g
Material	Anodised aluminium
Color	Black
Current Consumption	180 mA up to max. 1 A
Operation Voltage	24 V DC

## POWER AMP MANAGEMENT FOR UP TO 10 POWER AMPS

DHU-SR

Art no.: 37018



## PRODUCT INFORMATION

- 4 balanced AF inputs
- Max. 8 line amplifiers
- Max. 2 backup amplifiers
- Configurable static audio routing
- Integrated monitor speaker with level control and channel selection buttons
- 1 audio link connection to the next DHU
- 4 digital fault outputs
- 1 group fault relay
- 23 LEDs to display the system status
- Part of the EN54-16 certification

## TECHNICAL DATA

Dimensions (H x W x D)	19", 1HU, 170 mm depth plus connector
Weight	1.400 g
Material	Anodised aluminium
Color	Black
Current Consumption	180 mA
Operation Voltage	24 V DC

Power amp management for up to 10 power amps  
SAZ01

## POWER AMP MANAGEMENT FOR UP TO 10 POWER AMPS, DYNAMIC ROUTING

DHU-DR

Art no.: 37019



## PRODUCT INFORMATION

- 4 balanced AF inputs
- Max. 8 line amplifiers
- Max. 2 backup amplifiers
- 4 configurable dynamic audio routings
- Integrated monitor speaker with level control and channel selection buttons
- 1 audio link connection to the next DHU
- 4 digital fault outputs
- 1 group fault relay
- 23 LEDs to display the system status
- Part of the EN54-16 certification

## TECHNICAL DATA

Dimensions (H x W x D)	19", 1HU, 170 mm depth plus connector
Weight	1.400 g
Material	Anodised aluminium
Color	Black
Current Consumption	180 mA
Operation Voltage	24 V DC

Power amp management for up to 10 power amps, dynamic routing

## DIGITAL LINE MONITOR / CONTROLLER

DLC16

Art no.: 37020



## PRODUCT INFORMATION

- Fault monitoring of up to 16 connected 100 volt-speaker lines
- 8 channels, each with 2 outputs for speaker lines (A + B)
- Permanent monitoring optionally via line impedance and/or pilot power impedance measurement
- Monitoring when switching on with EOL module
- Up to 8 additional DLC16 modules on a DLC16 master via slave bus
- 3 configurable digital control inputs
- 4 configurable digital control outputs
- 1 group fault relay
- Part of the EN54-16 certification

## TECHNICAL DATA

Dimensions (H x W x D)	19", 1HU, 225 mm depth plus connector
Weight	2.000 g
Material	Anodised aluminium
Color	Black
Current Consumption	100 – 230 mA
Operation Voltage	24 V DC

Digital line monitor / controller SAZ01

## DIGITAL VOICE MEMORY, STORAGE CAPACITY 30 MIN WITH A 128 MB FLASH CARD

DAC02

Art no.: 37021



Digital voice memory, storage capacity 30 min with a 128 MB flash card

## PRODUCT INFORMATION

- Management of up to 8 audio files
- Cyclically logged verification
- Audio processor monitoring
- SD card with 128 MB storage capacity included
- Bus connection for digital voice alarm control panel SAZ01
- 8 alternative digital control inputs
- 8 digital status outputs
- Fuse monitoring output
- 3 status and fault LEDs and 6 signal level controls on the front panel
- Part of the EN54-16 certification

## TECHNICAL DATA

Dimensions (H x W x D)	Module 3HU, 7DU, depth 160 mm
Weight	200 g
Material	Anodised aluminium
Color	Black
Current Consumption	40 mA
Operation Voltage	24 V DC

## INPUT-OUTPUT UNIT

SAZIO

Art no.: 37022



Input-output unit

## PRODUCT INFORMATION

- Connectivity to FAS with line monitoring possible
- Connection of wired call stations or an analogue telephone system
- For networking several control panels
- 3 adjustable balanced AF audio inputs
- 20 configurable digital inputs
- 8 digital outputs
- Fuse monitoring output
- Signalling of operating and fault states
- Part of the EN54-16 certification

## TECHNICAL DATA

Dimensions (H x W x D)	Module 3HU, 7DU, depth 160 mm
Weight	180 g
Material	Anodised aluminium
Color	Black
Current Consumption	80 mA
Operation Voltage	24 V DC

## DIGITAL MICROPHONE CALL STATION 12 CALL CIRCUITS

DSP12EX

Art no.: 37023



Digital microphone call station 12 call circuits

## PRODUCT INFORMATION

- Call station for the digital voice alarm control panel SAZ01
- 12 call/alarm zones can be selected individually via buttons
- 4 call groups selectable via buttons and individually programmable at each call station
- Pre-announcement chime can be accessed via a separate button
- 3 alarm groups selectable via buttons and individually programmable at each call station
- Separate alarm signal can be saved for each alarm group
- Display of the operating voltage / emergency power operation
- Fault display
- Determining a fault type by calling up a fault code number
- Microphone monitoring and line monitoring
- Compressor / limiter for signal conditioning
- Part of the EN54-16 certification

## TECHNICAL DATA

Dimensions (H x W x D)	240mm/42mm/117mm
Weight	700 g
Material	Anodised aluminium
Color	Silver
Current Consumption	50 mA
Operation Voltage	24 V DC

## DIGITAL MICROPHONE CALL STATION 24 CALL CIRCUITS

DSP24EX

Art no.: 37024



Digital microphone call station 24 call circuits

## PRODUCT INFORMATION

- Call station for the digital voice alarm control panel SAZ01
- 24 call/alarm zones can be selected individually via buttons
- 4 call groups selectable via buttons and individually programmable at each call station
- Pre-announcement chime can be accessed via a separate button
- 3 alarm groups selectable via buttons and individually programmable at each call station
- Separate alarm signal can be saved for each alarm group
- Display of the operating voltage / emergency power operation
- Fault display
- Determining a fault type by calling up a fault code number
- Microphone monitoring and line monitoring
- Compressor / limiter for signal conditioning
- Part of the EN54-16 certification

## TECHNICAL DATA

Dimensions (H x W x D)	240mm/42mm/117mm
Weight	700 g
Material	Anodised aluminium
Color	Silver
Current Consumption	60 mA
Operation Voltage	24 V DC

## DIGITAL FIRE BRIGADE CALL STATION WITH PROFILE CYLINDER

FWDSP-PZ

Art no.: 37028



Digital fire brigade call station with profile cylinder

## PRODUCT INFORMATION

- Lockable housing, profile half cylinder
- 6 freely assignable buttons with built-in LED status displays (alarms / call groups)
- Acknowledgement button for acoustic fault signal
- Separate alarm signal can be saved for each alarm group
- Display of the operating states and faults in the call station system via visual and acoustic signals
- Microphone monitoring with immediate fault message to the system if the microphone fails
- Compressor and limiter
- Simple configuration of the call station via PC software
- Basic volume of the microphone adjustable via a trimmer
- Part of the EN54-16 certification

## TECHNICAL DATA

Dimensions (H x W x D)	200mm/300mm/5mm
Weight	1.900 g
Color	Red
Current Consumption	50 mA
Operation Voltage	24 V DC

## DIGITAL RELAY CARD FOR MACHINE RAIL INSTALLATION WITH 12 POWER RELAYS

DRK12EX

Art no.: 37030



Digital relay card for machine rail installation with 12 power relays

## PRODUCT INFORMATION

- 12 configurable relays (2 changeover contacts each)
- Individual use of single relays for speaker lines or switching functions
- Functions can be linked via logic elements
- A digital input for mandatory measurement using digital line monitors
- Two digital outputs, configurable like relay functions
- Two potential-free changeover contacts for fault messages (1x NO contact and 1x NC contact)
- Status LEDs for each relay
- Two system bus status LEDs
- Load capacity of the digital outputs: 30 VDC / 80 mA (open collector)
- Load capacity of the relay AC: 230 VAC / 8 A (per relay)
- Load capacity of the relay DC: 30 VDC / 8 A (per relay)
- Part of the EN54-16 certification

## TECHNICAL DATA

Dimensions (H x W x D)	B: 288mm, T: 117mm
Current Consumption	20 - 270 mA
Operation Voltage	24 V DC

## DIGITAL RELAY CARD FOR MACHINE RAIL INSTALLATION WITH 24 POWER RELAYS

DRK24E

Art no.: 37031



Digital relay card for machine rail installation with 24 power relays

## PRODUCT INFORMATION

- 24 configurable relays (2 changeover contacts each)
- Individual use of single relays for speaker lines or switching functions
- Functions can be linked via logic elements
- A digital input for mandatory measurement using digital line monitors
- Two digital outputs, configurable like relay functions
- Two potential-free changeover contacts for fault messages (1 x NO contact and 1 x NC contact)
- Status LEDs for each relay
- Two system bus status LEDs
- Load capacity of the digital outputs: 30 VDC / 80 mA (open collector)
- Load capacity of the relay AC: 230 VAC / 8 A (per relay)
- Load capacity of the relay DC: 30 VDC / 8 A (per relay)
- Part of the EN54-16 certification

## TECHNICAL DATA

Dimensions (H x W x D)	W: 288 mm, D: 117 mm
Current Consumption	20 - 550 mA
Operation Voltage	24 V DC

## DIGITAL LOG UNIT WITH LCD DISPLAY

DPE

Art no.: 37033



Digital log unit with LCD display

## PRODUCT INFORMATION

- For monitoring and fault logging
- Internal storage for fault status changes and configurable fault texts
- 16 digital inputs for external fault signals
- Display of faults and operating status via LCD display
- Acoustic fault signal
- Operation via two buttons on the front panel
- Printer interface for fault logging
- Connection for a DCF-77 module for time synchronisation
- 5 digital outputs
- Group fault output
- Part of the EN54-16 certification

## TECHNICAL DATA

Dimensions (H x W x D)	19", 2HU, 50 mm depth plus connector
Weight	900 g
Material	Anodised aluminium
Color	Black
Current Consumption	70 mA
Operation Voltage	24 V DC

## DIGITAL I/O CARD FOR SELECTIVE CONTROL OF THE VAC (ONLY ALARM) VIA THE FACP

MIO-M (BMZ)

Art no.: 37036



Digital I/O card for selective control of the VAC (only alarm) via the FACP

## PRODUCT INFORMATION

- Digital input/output extension card for connecting a FACP
- Connection of up to 8 slave modules MIO-S
- Two programmable timers for interval alerting of additional zones
- 3 fault outputs
- Signalling of operating and fault states via 6 status LEDs
- Part of the EN54-16 certification

## TECHNICAL DATA

Dimensions (H x W x D)	Module 3HU, 7DU, depth 160 mm
Weight	175 g
Material	Anodised aluminium
Color	Black
Current Consumption	50 mA
Operation Voltage	24 V DC

## DIGITAL I/O CARD FOR SELECTIVE CONTROL OF THE VAC (ALARM AND CALL) VIA THE

MIO-M (BMZ/CALL)

Art no.: 37037



Digital I/O card for selective control of the VAC (alarm and call) via the FACP

## PRODUCT INFORMATION

- Digital input/output extension card for connecting a FACP
- Connection of up to 8 slave modules MIO-S
- Two programmable timers for interval alerting of additional zones
- 3 fault outputs
- Signalling of operating and fault states via 6 status LEDs
- Control of call presets
- MIO-S modules can be configured as call preset slave modules
- Part of the EN54-16 certification

## TECHNICAL DATA

Dimensions (H x W x D)	Module 3HU, 7DU, depth 160 mm
Weight	175 g
Material	Anodised aluminium
Color	Black
Current Consumption	50 mA
Operation Voltage	24 V DC

DIGITAL I/O CARD FOR SELECTIVE CONTROL OF THE VAC (ALARM CONTROL WITH P

MIO-M (BMZ/AMOK)

Art no.: 37038



Digital I/O card for selective control of the VAC (alarm control with priorities)

PRODUCT INFORMATION

- Digital input/output extension card for connecting a FACP
- Connection of up to 8 slave modules MIO-S
- Two programmable timers for interval alerting of additional zones
- 3 fault outputs
- Signalling of operating and fault states via 6 status LEDs
- Control of call presets
- 8 priorities can be assigned to slave modules of the MIO (FACP/EMERGENCY)
- Part of the EN54-16 certification

TECHNICAL DATA

Dimensions (H x W x D)	Module 3HU, 7DU, depth 160 mm
Weight	175 g
Material	Anodised aluminium
Color	Black
Current Consumption	50 mA
Operation Voltage	24 V DC

DIGITAL I/O CARD FOR NETWORKING VACIE CONTROL PANELS

MIO-M (NET)

Art no.: 37039



Digital I/O card for networking VACIE control panels

PRODUCT INFORMATION

- To network two voice alarm control panels SAZ01
- Connection of up to 8 slave modules MIO-S
- Freely configurable presets for activating up to 48 broadcast zones
- 3 fault outputs
- Adjustable balanced AF input
- Part of the EN54-16 certification

TECHNICAL DATA

Dimensions (H x W x D)	Module 3HU, 7DU, depth 160 mm
Weight	175 g
Material	Anodised aluminium
Color	Black
Current Consumption	50 mA
Operation Voltage	24 V DC

## SAZ01 BACKPLANE EXTENSION FOR AUDIO MONITORING OF 3 CALL STATIONS

SAZ BP MONITORING 3 DSP

Art no.: 37053



## PRODUCT INFORMATION

- from the building installation to the SEP/VAC
- for DIN rail mounting
- Call station path protected against short circuits with a fuse
- LED as indicator for short-circuit-free tone wire path and connected call station
- Part of the EN54-16 certification

## TECHNICAL DATA

Operation Voltage	24 V DC
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SAZ01 backplane extension for audio monitoring of 3 call stations

## DIG. IMPEDANCE MEASUREMENT CARD FOR MONITORING 4 X 100 V SPEAKER LINES

DLW04

Art no.: 37054



## PRODUCT INFORMATION

- Digital line monitor for monitoring up to four 100 V speaker lines
- Inspection of the lines by measuring impedance using a test frequency
- Monitoring of short circuit, line break and earth fault
- Separation of the lines from the line network in the event of a short circuit
- Configurable measurement intervals and tolerances
- 3 digital inputs for measurement start / stop and forced measurement
- 3 digital outputs for measurement running, start group fault and slave DLW
- Fuse monitoring output
- Status and measurement result displays via LEDs and PC software
- Simple configuration of all measurement parameters via PC software
- Part of the EN54-16 certification

## TECHNICAL DATA

Dimensions (H x W x D)	Module 3HU, 7DU, depth 160 mm
Weight	270 g
Material	Anodised aluminium
Color	Black
Current Consumption	40 - 130 mA
Operation Voltage	24 V DC

Dig. impedance measurement card for monitoring 4 x 100 V speaker lines

COVER PLATE SUITABLE FOR DSP12EX AND DSP24EX

DSP12/24EX

Art no.: 37061

Cover plate suitable for DSP12EX and DSP24EX

PRODUCT INFORMATION

- Cover plate for the 6-button block of the alarm group buttons
- suitable for DSP12EX and DSP24EX

INSTALLATION KIT FOR BUILT-IN CALL STATION FOR DSP12EX AND DSP24EX

19" DSP12-24 EX

Art no.: 37062

PRODUCT INFORMATION

- For simple installation of built-in call stations in 19" rack cabinets
- 3HU front panel with milled cut-out in the size of the call station housing

TECHNICAL DATA

Dimensions (H x W x D) 19", 3U



19" installation

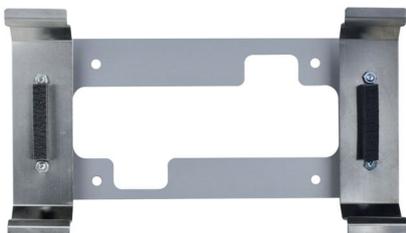
WALL MOUNT FOR DSP12-24EX

DSP12-24EX

Art no.: 37064

PRODUCT INFORMATION

- To mount call station DSP12-24EX on the wall



Wall mount for DSP12-24EX

## PANEL INSTALLATION SET FOR DSP12EX AND DSP24EX

DSP12EX - DSP24EX

Art no.: 37065

## PRODUCT INFORMATION

- For simple installation of built-in call stations in tables or panels
- suitable for DSP12EX and DSP24EX



Panel installation set for DSP12EX and DSP24EX

## TABLEAU INSTALLATION SET DSP48-16EX

DSP48EX - DSP16EX

Art no.: 37066

For console or panel mounting

## PRODUCT INFORMATION

- For easy installation of built-in microphone units in tables or trays
- suitable for DSP48EX and DSP16EX

## DIGITAL TELEPHONE CONNECTION MODULE

DTAM

Art no.: 37041



for connection of a telephone exchange, control via DTMF or MF

## PRODUCT INFORMATION

- For connecting a telephone exchange to the voice alarm control center
- Announcements in selected public address zones via touch-tone telephone
- Control via multi-frequency dialing (DTMF)
- Selection of sound zones via 6 configurable presets
- Access authorization code as protection against unauthorized or accidental announcements
- 1 balanced LF audio input
- 2 digital control inputs
- 8 digitale Ausgänge
- Ausgang zur Sicherheitsüberwachung
- Power- und Verbindungs-Anzeige auf der Frontplatte

## TECHNICAL DATA

Dimensions (H x W x D)	Module 3U, 7HP, depth 160mm
Weight	270 g
Material	Anodized aluminum
Color	Black
Current Consumption	80 mA
Rated Voltage	24 V DC

100 V POWER AMPLIFIER 250 WATTS 2HU

SPA250 DHU

Art no.: 37067



Class-D power amplifier, 230VAC and 24VDC, 100V, 70V or 8 Ohms

### PRODUCT INFORMATION

- Class-D power amplifier in PWM technology for 70 V, 100 V or 4 Ohm loudspeakers
- Properties better than IEC 268.3
- Automatic switching between mains and emergency power operation
- Full output power in emergency power operation
- Rear power switch (inrush current limitation)
- Short-circuit proof
- Interchangeable input modules with adjustable input sensitivity
- Internal processor-controlled fault monitoring
- Power outputs with plug-in control
- Signalling outputs for earth faults and power amp faults
- Backup amplifier input
- Inputs for standby and backup switching
- Signal and clip display via LEDs on the front panel
- Front status and fault display via LEDs
- Rated voltage (mains operation) 230 VAC / 50 Hz
- Rated current 1.38 A
- Output power 250 W
- Power consumption with mains operation at rest 9.9 W
- at rated power 318 W
- Operating voltage (emergency power operation) 24 VDC
- Power consumption (emergency power operation) at rest 5.23 W
- at standby 0.9 W
- at 1/8 power (speech / music) 47 W
- Frequency response (-3 dB/-3 dB) 80 Hz - 20 kHz
- Part of the EN54-16 certification

### TECHNICAL DATA

Dimensions (H x W x D)	19", 2HU, 345 mm depth plus connector
Weight	11,5 kg
Material	Anodised aluminium
Color	Black

100 V POWER AMPLIFIER 500 WATTS 2HU SPA500 DHU  
Art no.: 37068



Class-D power amplifier, 230VAC and 24VDC, 100V, 70V or 8 Ohms

PRODUCT INFORMATION

- Class-D power amplifier in PWM technology for 70 V, 100 V or 4 Ohm loudspeakers
- Properties better than IEC 268.3
- Automatic switching between mains and emergency power operation
- Full output power in emergency power operation
- Rear power switch (inrush current limitation)
- Short-circuit proof
- Interchangeable input modules with adjustable input sensitivity
- Internal processor-controlled fault monitoring
- Power outputs with plug-in control
- Signalling outputs for earth faults and power amp faults
- Backup amplifier input
- Inputs for standby and backup switching
- Signal and clip display via LEDs on the front panel
- Front status and fault display via LEDs
- Rated voltage (mains operation) 230 VAC / 50 Hz
- Rated current 2.82 A
- Output power 500 W
- Power consumption with mains operation at rest 10.1 W
- at rated power 648 W
- Operating voltage (emergency power operation) 24 VDC
- Power consumption (emergency power operation) at rest 5.33 W
- at standby 0.9 W
- at 1/8 power (speech / music) 86 W
- Frequency response (-3 dB/-3 dB) 80 Hz - 20 kHz
- Part of the EN54-16 certification

TECHNICAL DATA

Dimensions (H x W x D)	19", 2HU, 345 mm depth plus connector
Weight	13 kg
Material	Anodised aluminium
Color	Black

100 V POWER AMPLIFIER 2X250 WATTS, 2HU

SPA2250 DHU

Art no.: 37069

## PRODUCT INFORMATION



Class-D power amplifier, 230VAC and 24VDC, 100V, 70V or 8 Ohms

- Class-D power amplifier in PWM technology for 70 V, 100 V or 4 Ohm loudspeakers
- Properties better than IEC 268.3
- Automatic switching between mains and emergency power operation
- Full output power in emergency power operation
- Rear power switch (inrush current limitation)
- Short-circuit proof
- Interchangeable input modules with adjustable input sensitivity
- Internal processor-controlled fault monitoring
- Power outputs with plug-in control
- Signalling outputs for earth faults and power amp faults
- Backup amplifier input
- Inputs for standby and backup switching
- Signal and clip display via LEDs on the front panel
- Front status and fault display via LEDs
- Rated voltage (mains operation) 230 VAC / 50 Hz
- Rated current 2.96 A
- Output power 2x250 W
- Power consumption with mains operation at rest 20 W
- at rated power 680 W
- Operating voltage (emergency power operation) 24 VDC
- Power consumption (emergency power operation) at rest 9.6 W
- at standby 1.6 W
- at 1/8 power (speech / music) 95 W
- Frequency response (-3 dB/-3 dB) 80 Hz - 20 kHz
- Part of the EN54-16 certification

## TECHNICAL DATA

Dimensions (H x W x D)	19", 2HU, 345 mm depth plus connector
Weight	12,5 kg
Material	Anodised aluminium
Color	Black

**100 V POWER AMPLIFIER 2X500 WATTS, 2HU** **SPA2500 DHU**  
**Art no.: 37070**



Class-D power amplifier, 230VAC and 24VDC, 100V, 70V or 8 Ohms

**PRODUCT INFORMATION**

- Class-D power amplifier in PWM technology for 70 V, 100 V or 4 Ohm loudspeakers
- Properties better than IEC 268.3
- Automatic switching between mains and emergency power operation
- Full output power in emergency power operation
- Rear power switch (inrush current limitation)
- Short-circuit proof
- Interchangeable input modules with adjustable input sensitivity
- Internal processor-controlled fault monitoring
- Power outputs with plug-in control
- Signalling outputs for earth faults and power amp faults
- Backup amplifier input
- Inputs for standby and backup switching
- Signal and clip display via LEDs on the front panel
- Front status and fault display via LEDs
- Rated voltage (mains operation) 230 VAC / 50 Hz
- Rated current 5.9 A
- Output power 2x500 W
- Power consumption with mains operation at rest 20 W
- at rated power 1,320 W
- Operating voltage (emergency power operation) 24 VDC
- Power consumption (emergency power operation) at rest 9.6 W
- at standby 1.6 W
- at 1/8 power (speech / music) 170 W
- Frequency response (-3 dB/-3 dB) 80 Hz - 20 kHz
- Part of the EN54-16 certification

**TECHNICAL DATA**

Dimensions (H x W x D)	19", 2HU, 345 mm depth plus connector
Weight	15 kg
Material	Anodised aluminium
Color	Black

**END OF LINE MODUL** **EOL-MODUL**  
**Art no.: 37012**

End-of-line module

**PRODUCT INFORMATION**

- for installation at the end of a speaker line
- Part of the EN54-16 certification

16 A CHARGING POWER SUPPLY UNIT, TEMPERATURE-  
CONTROLLED BATTERY CHARGING

DSV-DR1 - 4X40A

Art no.: 37071

16 A charging power supply unit, temperature-  
controlled battery charging

## PRODUCT INFORMATION

- Model 4x40, max. power amplifier output load: 4 x 40 A
- Digital power supply for 24 V supply to VAC power amplifiers and components
- Certified according to EN 54-4
- Automatic switch to battery operation in the event of a power failure
- Protection of the batteries against deep discharge
- Up to 4 supply outputs for additional VAC components (aux)
- Temperature compensation sensor
- Monitoring of the circuit breakers at the supply outputs
- Signalling of operating and fault states via LEDs and 3 status outputs
- Fault input for reporting external faults
- USB port for service purposes
- Mains voltage 230 VAC@50 Hz
- Power factor 0.94
- Battery charging efficiency 84%
- Output voltage stabilisation 1.5%
- Max. mains current consumption 2.7 A
- Max. charging current 4 – 16 A
- Max. aux output load 2 x 5 A
- Max. battery capacity 270 Ah
- Part of the EN54-16 certification

## TECHNICAL DATA

Dimensions (H x W x D)	19", 1HU, 322 mm depth plus connector
Material	Anodised aluminium
Color	Black

16 A CHARGING POWER SUPPLY UNIT, TEMPERATURE-CONTROLLED BATTERY CHARGING

DSV-DR1 - 6X40A

Art no.: 37072

16 A charging power supply unit, temperature-controlled battery charging

PRODUCT INFORMATION

- Model 6x40, max. power amplifier output load: 6 x 40 A
- Digital power supply for 24 V supply to VAC power amplifiers and components
- Certified according to EN 54-4
- Automatic switch to battery operation in the event of a power failure
- Protection of the batteries against deep discharge
- Up to 4 supply outputs for additional VAC components (aux)
- Temperature compensation sensor
- Monitoring of the circuit breakers at the supply outputs
- Signalling of operating and fault states via LEDs and 3 status outputs
- Fault input for reporting external faults
- USB port for service purposes
- Mains voltage 230 VAC@50 Hz
- Power factor 0.94
- Battery charging efficiency 84%
- Output voltage stabilisation 1.5%
- Max. mains current consumption 2.7 A
- Max. charging current 4 – 16 A
- Max. aux output load 4 x 5 A
- Max. battery capacity 270 Ah
- Part of the EN54-16 certification

TECHNICAL DATA

Dimensions (H x W x D)	19", 1HU, 322 mm depth plus connector
Material	Anodised aluminium
Color	Black

16 A CHARGING POWER SUPPLY UNIT, TEMPERATURE-CONTROLLED BATTERY CHARGING

DSV-DR1 4X40A-2X60A

Art no.: 37073

16 A charging power supply unit, temperature-controlled battery charging

PRODUCT INFORMATION

- Model 4x40 / 2x60, max. power amplifier output load: 4 x 40 A + 2 x 60 A
- Digital power supply for 24 V supply to VAC power amplifiers and components
- Certified according to EN 54-4
- Automatic switch to battery operation in the event of a power failure
- Protection of the batteries against deep discharge
- Up to 4 supply outputs for additional VAC components (aux)
- Temperature compensation sensor
- Monitoring of the circuit breakers at the supply outputs
- Signalling of operating and fault states via LEDs and 3 status outputs
- Fault input for reporting external faults
- USB port for service purposes
- Mains voltage 230 VAC@50 Hz
- Power factor 0.94
- Battery charging efficiency 84%
- Output voltage stabilisation 1.5%
- Max. mains current consumption 2.7 A
- Max. charging current 4 – 16 A
- Max. aux output load 4 x 5 A
- Max. battery capacity 270 Ah
- Part of the EN54-16 certification

TECHNICAL DATA

Dimensions (H x W x D)	19", 1HU, 322 mm depth plus connector
Material	Anodised aluminium
Color	Black

MIXER PRE-AMPLIFIER, 1 MONO (MIC. / LINE)

MV21

Art no.: 37074



PRODUCT INFORMATION

- Mixer pre-amplifier with a balanced microphone/line input and a stereo/line input
- 12 V phantom power switchable
- Treble and bass equalisation for the main output
- Output level control with level indicator
- Control input for muting the audio output
- Cascading possibility of several MV21
- Optional transformer for galvanic isolation of microphone input and main output

TECHNICAL DATA

Dimensions (H x W x D)	Module 3HU, 7DU, depth 160 mm
Weight	250 g
Material	Anodised aluminium
Color	Black

Mixer pre-amplifier, 1 mono (mic. / line)

RELAY CARD 100 V WITH 6 RELAYS (2 X CHANGEOVER CONTACTS)

RK06

Art no.: 37075



PRODUCT INFORMATION

- Relay control via 6 digital inputs or universal UTF keypad
- Display of the active relays via LEDs on the front panel
- Backup output for joint operation with the backup switch HU06
- Fuse monitoring output
- Part of the EN54-16 certification

TECHNICAL DATA

Dimensions (H x W x D)	Module 3HU, 7DU, depth 160 mm
Weight	260 g
Material	Anodised aluminium
Color	Black

Relay card 100 V with 6 relays (2 x changeover contacts)

CONTROL MODULE FOR ANALOGUE AND DIGITAL SLAVE CLOCKS

DNU-LC

Art no.: 37076



PRODUCT INFORMATION

- Activation of the slave clocks via bipolar pulse
- Connection of up to 50 slave clocks possible
- Connection of an external DCF receiver simax electronics FU20 possible
- Automatic changeover between summer and winter time
- Fault output for signalling faulty DCF reception or a defective fuse
- 4 relay outputs with up to 100 configurable pulse switching times
- Display of the DCF field strength and faults via 6 LEDs on the front panel
- Display of the time and fault states via an optional display
- Simple configuration of all settings via PC software

TECHNICAL DATA

Dimensions (H x W x D)	Module 3HU, 7DU, depth 182 mm
Weight	170 g
Material	Anodised aluminium
Color	Black
Current Consumption	60 mA
Operation Voltage	24 V DC

Control module for analogue and digital slave clocks

OPTIONAL DISPLAY FOR THE DNU-LC MODULE

DNU-LC-DISPLAY

Art no.: 37077



PRODUCT INFORMATION

- for time display / fault display
- Display of the current DCF77 time via 7-segment LED display in energy-saving technology

TECHNICAL DATA

Weight	130 g
Material	Anodised aluminium
Color	Black
Current Consumption	60 mA
Operation Voltage	24 V DC
Remarks	

Optional display for the DNU-LC module

AF RELAY CARD FOR 6 AF CHANNELS

RK06NF

Art no.: 37078



PRODUCT INFORMATION

- Two changeover contacts each
- Relay control via 6 digital inputs or universal UTF keypad
- Display of the active relays via LEDs on the front panel
- Fuse monitoring output
- Part of the EN54-16 certification

TECHNICAL DATA

Dimensions (H x W x D)	Module 3HU, 7DU, depth 160 mm
Weight	260 g
Material	Anodised aluminium
Color	Black
Current Consumption	150 mA
Operation Voltage	24 V DC

AF relay card for 6 AF channels

UNIVERSAL KEYPAD FOR CONTROLLING THE RK06 AND RK06NF

UTF V2

Art no.: 37079

Universal keypad for controlling the RK06 and RK06NF

PRODUCT INFORMATION

- Universal keypad with 6 buttons for controlling one associated open collector output each
- Configuration of the button function via DIP switches
- If the buttons are configured as switches, individual buttons can be locked
- Restoration of the last switching state after a power failure
- Display of the output states via a green LED in each button
- 2 digital control inputs to activate and deactivate all outputs
- Connection via 12-pin screw strip or direct connection with RK06 / RK06NF
- Part of the EN54-16 certification

TECHNICAL DATA

Dimensions (H x W x D)	Module 3HU, 14DU, depth 300 mm
Weight	130 g
Material	Anodised aluminium
Color	Black
Current Consumption	60 mA
Operation Voltage	24 V DC

DIG. FUSE MONITOR CARD, 24 INPUTS

DSW

Art no.: 37080



Dig. Fuse monitor card, 24 inputs

PRODUCT INFORMATION

- for monitoring the fuses of up to 24 modules
- 24 fault inputs with configurable activation signal via DIP switches
- Fault signalling via 3 LEDs on the front panel and optionally via an alarm sounder
- Status relay for signalling the normal and fault status (1 NC contact, 1 NO contact)
- Fuse monitoring output
- Part of the EN54-16 certification

TECHNICAL DATA

Dimensions (H x W x D)	Module 3HU, 7DU, depth 160 mm
Weight	160 g
Material	Anodised aluminium
Color	Black
Current Consumption	50 mA
Operation Voltage	24VDC

## DIGITAL CONTACT MONITOR

DKW02

Art no.: 37081



Digital contact monitor

## PRODUCT INFORMATION

- for monitoring up to two contacts in limit value or quiescent current technology
- Line-monitored connection of e.g. a FAS
- 9 operating modes to adapt to the specified requirements
- 2 monitored inputs (analogue voltage inputs)
- 2 control outputs (potential-free NO contact)
- Support for the alarm control signals of the SAZ01 and SAZIO modules
- 1 fault output (potential-free NO contact)
- Display of the operating and fault states via two LEDs on the PCB
- Simple configuration with DIP switches on the PCB
- Part of the EN54-16 certification

## TECHNICAL DATA

Dimensions (H x W x D)	W: 90 mm, D: 65 mm
Weight	200 g
Current Consumption	70 mA
Output-Rated voltage	24 V DC

## MODULATION DETECTOR FOR AF SIGNALS, 100 V / 775 mV INPUT

MD01

Art no.: 37082



Modulation detector for AF signals, 100 V / 775 mV input

## PRODUCT INFORMATION

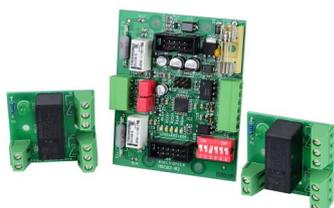
- for detecting and forwarding 100 V or 775 mV AF audio signals
- An installed SEP can be connected to a new system
- Detection threshold and connection timeout adjustable via DIP switch
- Output level adjustable via trimmer
- 2 balanced audio inputs
- 1 adjustable balanced audio output for forwarding the input signal
- 1 relay for signalling detection, 1 NC contact and 1 NO contact output
- Fuse monitoring output
- 1 digital control input to deactivate the relay
- Operating and status displays via 3 LEDs

## TECHNICAL DATA

Dimensions (H x W x D)	W: 17 mm, D: 65 mm
Current Consumption	90 mA
Rated Voltage	24 V DC

**MRC02 – RELAY MONITORING CARD FOR UP TO 2 RELAY CARDS RB01** **MRC02-SET**

**Art no.: 37083**



**PRODUCT INFORMATION**

- for the monitored activation of up to 2 relay cards, each with 2 potential-free changeover contacts
- to switch off or activate devices in the event of an alarm
- Permanent monitoring of the connection to the RB01 for short circuits and interruptions
- Several MRC02 can be connected to increase the number of relays
- 1 switching input per relay
- 1 fault output
- Signalling of operating and fault states via 5 status LEDs
- Part of the EN54-16 certification

**TECHNICAL DATA**

Dimensions (H x W x D)	W: 77 mm, D: 65 mm
Weight	50 g
Current Consumption	84 mA
Rated Voltage	24 V DC

MRC02 – relay monitoring card for up to 2 relay cards RB01

**TWO-CHANNEL DIGITAL AUDIO SIGNAL PROCESSOR WITH 4 CONFIGURABLE PRESETS** **DAP02 – RJ12**

**Art no.: 37084**



**PRODUCT INFORMATION**

- One 6x parametric graphic equaliser per channel
- One two-channel high pass and low pass per channel
- Digital test signal generator
- Digital pilot-power generator with adjustable pulse/pause ratio
- 3 different input modes: Mixer – AGC – router
- 2 balanced AF audio outputs
- One output mixer with upstream limiter per channel
- 2 potential-free fault relay outputs
- Signal and clip display via LEDs
- Part of the EN54-16 certification

**TECHNICAL DATA**

Dimensions (H x W x D)	Module 3HU, 7DU, depth 160 mm
Weight	170 g
Material	Anodised aluminium
Color	Black
Current Consumption	120 mA
Operation Voltage	24 V DC

Two-channel digital audio signal processor with 4 configurable presets

TWO-CHANNEL DIGITAL AUDIO SIGNAL PROCESSOR WITH 4 CONFIGURABLE PRESETS

DAP02 - RJ45

Art no.: 37034



Two-channel digital audio signal processor with 4 configurable presets

PRODUCT INFORMATION

- One 6x parametric graphic equalizer per channel
- One two-channel high pass and low pass per channel
- Digital test signal generator
- Digital pilot-power generator with adjustable pulse/pause ratio
- 3 different input modes: Mixer - AGC - router
- 2 balanced AF audio outputs
- One output mixer with upstream limiter per channel
- 2 potential-free fault relay outputs
- Signal and clip display via LEDs
- Part of the EN54-16 certification

TECHNICAL DATA

Dimensions (H x W x D)	Module 3HU, 7DU, depth 160 mm
Weight	170 g
Material	Anodised aluminium
Color	Black
Current Consumption	120 mA
Operation Voltage	24 V DC

FLUSH-MOUNTED MIXER AMPLIFIER 1 X BLUETOOTH / 1 X MIC. INPUT / 1 X STEREO L

UPMV-BT

Art no.: 37085



Flush-mounted mixer amplifier 1 x Bluetooth / 1 x mic. input / 1 x stereo line

PRODUCT INFORMATION

- 1 balanced audio output signal
- One button each for activating the inputs
- One volume control each for setting the signal level
- Trimmer to adjust microphone sensitivity
- Main level control for the output volume
- Treble and bass control for the main output
- Level indicator for output signal
- Including flush-mounted installation housing

TECHNICAL DATA

Dimensions (H x W x D)	180mm/180mm/30mm
Weight	300 g
Material	Anodised aluminium
Color	grey
Current Consumption	60 mA
Operation Voltage	24 V DC

SURFACE-MOUNTED HOUSING FOR FLUSH-MOUNTED MIXER AMPLIFIER	UPMV-APG
<b>Art no.: 37087</b>	

Surface-mounted housing for flush-mounted mixer amplifier

CUSTOMISED DEVICE IDENTIFICATION	UPMV-BT
<b>Art no.: 37088</b>	

Customised device identification

**PRODUCT INFORMATION**

- For unique identification of the Bluetooth participant during pairing

AUDIO TRANSFORMER FOR GALVANIC SEPARATION	UPMV- ADAPTER
<b>Art no.: 37145</b>	

Audio transformer for galvanic separation

POWER SUPPLY MDR60-24 (24V / 2A)	MDR60-24 (24V / 2A)
<b>Art no.: 37146</b>	

POWER SUPPLY MDR60-24 (24V / 2A)

POWER SUPPLY MDR100-24 (24V / 4A)	MDR100-24 (24V / 4A)
<b>Art no.: 37147</b>	

POWER SUPPLY MDR100-24 (24V / 4A)

CENTRAL SWITCH ON THE FRONT SIDE AND 8 PROTECTIVE CONTACT SOCKETS ON THE REAR SIDE	POWER-OUTLET-STRIP
<b>Art no.: 37148</b>	

Central switch on the front side and 8 protective contact sockets on the rear side

SD MEMORY CARD 512 MB INDUSTRIALGRADE FOR THE MODULES  
SAZ02 / DAC02

SD CARD

Art no.: 37149

SD memory card 512 MB industrialgrade for the  
modules SAZ02 / DAC02

FOR THE POWER AMPLIFIERS SPA 250 / 2250 DHU

SPA DHU TO 2CH ADAPTERSET

Art no.: 37150

For the power amplifiers SPA 250 / 2250 DHU

POWER SUPPLY UNIT FOR 230 V / 24V-8A

LV60PWR

Art no.: 37089



Power supply unit for 230 V / 24V-8A

#### PRODUCT INFORMATION

- Digital power supply for mains and battery operation with PFC according to DIN 61000 -3 -2
- Input voltage 230 VAC, output voltage 24 VDC
- Output power maximum 8 A / 200 W
- Output voltage monitoring
- Automatic switch to battery operation in the event of a power failure
- Short-circuit and overload-proof
- 2 digital inputs
- 3 digital outputs
- Signalling of operating and fault states via LEDs on the front panel
- Part of the EN54-16 certification

#### TECHNICAL DATA

Dimensions (H x W x D)	Module 3HU, 14DU, depth 175 mm
Weight	700 g
Material	Anodised aluminium
Color	Black
Current Consumption	1 A
Operation Voltage	230 V AC

RADIO RECEIVER DCF FOR DPE, DIU OR DNU-LC

FU20

Art no.: 37090

Radio receiver DCF for DPE, DIU or DNU-LC

RADIO RECEIVER DCF / GPS FOR DPE, DIU OR DNU-LC

FU30

Art no.: 37091

Radio receiver DCF / GPS for DPE, DIU or DNU-LC

REMOTE CONTROL / FAULT REPORTING UNIT

ASSE

Art no.: 37092



PRODUCT INFORMATION

- for signalling VAC faults at decentralised monitoring points
- Display of the fault state via visual signal and alarm sounder
- Fault alarm sounder can be deactivated using a key switch
- 2 input contacts
- 2 contacts for mains power supply (24 V)

TECHNICAL DATA

Dimensions (H x W x D)	80mm/187mm/80mm
Weight	400 g
Current Consumption	90 mA
Operation Voltage	24 V DC

Remote control / fault reporting unit

FRONT PANEL 7DU FOR BGT 3HU

FP07

Art no.: 37093

Front panel 7DU for BGT 3HU

PRODUCT INFORMATION

- for installation in the rack BGTSET SW - 19"

TECHNICAL DATA

Dimensions (H x W x D)	Front panel 7DU for BGT 3HU
Material	Anodised aluminium
Color	Black

FRONT PANEL 21DU FOR BGT 3HU

FP21

Art no.: 37094

Front panel 21DU for BGT 3HU

PRODUCT INFORMATION

- for installation in the rack BGTSET SW - 19"

TECHNICAL DATA

Dimensions (H x W x D)	Front panel 21DU for BGT 3HU
Material	Anodised aluminium
Color	Black

FRONT PANEL 1 HU

FP01HE

Art no.: 37095

Front panel 1 HU

PRODUCT INFORMATION

- 19", 1 height unit

TECHNICAL DATA

Dimensions (H x W x D)	19", 1 height unit
Material	Anodised aluminium
Color	Black

FRONT PANEL 2 HU

FP02HE

Art no.: 37096

Front panel 2 HU

PRODUCT INFORMATION

- 19", 2 height units

TECHNICAL DATA

Dimensions (H x W x D)	19", 2 height units
Material	Anodised aluminium
Color	Black

FRONT PANEL 3 HU

FP03HE

Art no.: 37097

Front panel 3 HU

PRODUCT INFORMATION

- 19", 3 height units

TECHNICAL DATA

Dimensions (H x W x D)	19", 3 height units
Material	Anodised aluminium
Color	Black

**FRONT PANEL 4 HU** **FP04HE**  
**Art no.: 37098**

Front panel 4 HU

**PRODUCT INFORMATION**

- 19", 4 height units

**TECHNICAL DATA**

Dimensions (H x W x D)	19", 4 height units
Material	Anodised aluminium
Color	Black

**VENTILATION FRONT PANEL 1 HU** **FP01HE/L**  
**Art no.: 37099**

Ventilation front panel 1 HU

**PRODUCT INFORMATION**

- 19", 1 height unit

**TECHNICAL DATA**

Dimensions (H x W x D)	19", 1 height unit
Material	Anodised aluminium
Color	Black

**CENTRAL PANEL 7DU FOR BGT 3HU** **ZP03 SW**  
**Art no.: 37100**

Central panel 7DU for BGT 3HU

**PRODUCT INFORMATION**

- for installation in the rack BGTSET SW – 19"
- to accommodate 3 fittings type: Neutrik XLR or simax ZPA

**TECHNICAL DATA**

Dimensions (H x W x D)	7DU for BGT 3HU
Material	Anodised aluminium
Color	Black

CENTRAL PANEL COVER

ZPA

Art no.: 37101

Central panel cover

PRODUCT INFORMATION

- for ZP03 SW

TECHNICAL DATA

Color schwarz

Remarks

XLR PLAYBACK FITTING

XLR-ZA

Art no.: 37102

XLR PLAYBACK FITTING

PRODUCT INFORMATION

- XLR, 3-pin, female

TECHNICAL DATA

Remarks

FEEDER ARMATURE SET, 2 X SOCKET, RED AND BLACK

CINCH RT-SW

Art no.: 37103

Feeder armature set, 2 x socket, red and black

PRODUCT INFORMATION

- Red or black

BGT INSTALLATION FRAME 3HU

BGTSET 3HE SW – 19"

Art no.: 37104

BGT installation frame 3HU

PRODUCT INFORMATION

- 1 x 19" installation frame, 3HU, 84DU
- incl. 2 x threaded strips, 12 x guide rail pairs, module guide rails

TECHNICAL DATA

Dimensions (H x W x D) 19", 3 height units

Material Anodised aluminium

Color Black

19" BGT 1HU FOR 3 EUROBOARDS

19" BGT 1HE 84TE

Art no.: 37119

19" BGT 1HU for 3 Euroboards

TECHNICAL DATA

Dimensions (H x W x D)	19", 1 height units
Material	Anodised aluminium
Color	Black

ADAPTER BOARD WITH 2X RJ12/45 JACKS

RJ12-RJ45-ADAPTER

Art no.: 37105

Adapter board with 2x RJ12/45 jacks

PRODUCT INFORMATION

- Adapter board with 2x RJ12/45 jacks on terminal strip
- Conversion of RJ-12 or RJ-45 sockets to terminal block connections or vice versa
- RJ-12 Y-circuit: distribution from one RJ-12 input to two RJ-12 outputs
- RJ-45 Y-circuit: distribution from one RJ-45 input to two RJ-45 output
- Maximum current carrying capacity 1 A

TECHNICAL DATA

Dimensions (H x W x D)	B: 63mm, T: 63mm
Weight	45 g

BATTERY 12 V-65 AH

AKKU 65AH

Art no.: 37106

Battery 12 V-65 AH

PRODUCT INFORMATION

- EMERGENCY POWER BATTERY 65 AH
- Absolutely maintenance-free operation
- Excellent high-current properties
- No dangerous goods according to IATA
- Robust design & position-independent operation
- High cycle stability
- Valve-regulated plastic construction
- Terminal: M6

TECHNICAL DATA

Dimensions (H x W x D)	350mm/167mm/183mm
Weight	21 kg

## BATTERY 12 V-100 AH

AKKU 100AH

Art no.: 37107

Battery 12 V-100 AH

## PRODUCT INFORMATION

- EMERGENCY POWER BATTERY 100 AH
- Absolutely maintenance-free operation
- Excellent high-current properties
- No dangerous goods according to IATA
- Robust design & position-independent operation
- High cycle stability
- Valve-regulated plastic construction
- Terminal: M8

## TECHNICAL DATA

Dimensions (H x W x D)	330mm/171mm/216mm
Weight	31,6 kg

## BATTERY 12 V-120 AH

AKKU 120AH

Art no.: 37108

Battery 12 V-120 AH

## PRODUCT INFORMATION

- EMERGENCY POWER BATTERY 120 AH
- Absolutely maintenance-free operation
- Excellent high-current properties
- No dangerous goods according to IATA
- Robust design & position-independent operation
- High cycle stability
- Valve-regulated plastic construction
- Terminal: M8

## TECHNICAL DATA

Dimensions (H x W x D)	407mm/177mm/227mm
Weight	35 kg

BATTERY 12 V-150 AH

AKKU 150AH

Art no.: 37109

Battery 12 V-150 AH

PRODUCT INFORMATION

- EMERGENCY POWER BATTERY 150 AH
- Absolutely maintenance-free operation
- Excellent high-current properties
- No dangerous goods according to IATA
- Robust design & position-independent operation
- High cycle stability
- Valve-regulated plastic construction
- Terminal: M8

TECHNICAL DATA

Dimensions (H x W x D)	483mm/170mm/240mm
Weight	44,8 kg

BATTERY 12 V-200 AH

AKKU 200AH

Art no.: 37110

Battery 12 V-200 AH

PRODUCT INFORMATION

- EMERGENCY POWER BATTERY 200 AH
- Absolutely maintenance-free operation
- Excellent high-current properties
- No dangerous goods according to IATA
- Robust design & position-independent operation
- High cycle stability
- Valve-regulated plastic construction
- Terminal: M8

TECHNICAL DATA

Dimensions (H x W x D)	522mm/240mm/240mm
Weight	60 kg

SWIVEL - WALL HOUSING 9U/19"

WG 9HE

G 221012

Art no.: 37121

SWIVEL - WALL HOUSING 9U/19"

PRODUCT INFORMATION

- With glass door / 615mm depth
- Two-piece 19" wallcabinet with IP30 degree of protection
- compact welded construction
- Solid glass door with 4 mm thick safety glass
- frame and all removable parts connected with grounding cables
- Cable entries at the top and bottom, in the back wall as well as in the roof and in the floor

TECHNICAL DATA

Dimensions (H x W x D)	500mm/600mm/615mm
Weight	22,7 kg
Material	Steel sheet
Color	grey

SWIVEL - WALL HOUSING 12U/19"

WGE 12HE

Art no.: 37122

SWIVEL - WALL HOUSING 12U/19"

PRODUCT INFORMATION

- With glass door / 615mm depth
- Two-piece 19" wallcabinet with IP30 degree of protection
- compact welded construction
- Solid glass door with 4 mm thick safety glass
- frame and all removable parts connected with grounding cables
- Cable entries at the top and bottom, in the back wall as well as in the roof and in the floor

TECHNICAL DATA

Dimensions (H x W x D)	615mm/600mm/615mm
Weight	26,2 kg
Material	Steel sheet
Color	grey

SWIVEL - WALL HOUSING 15U/19"

WG 15HE

Art no.: 37123

SWIVEL - WALL HOUSING 15U/19"

PRODUCT INFORMATION

- With glass door / 615mm depth
- Two-piece 19" wallcabinet with IP30 degree of protection
- compact welded construction
- Solid glass door with 4 mm thick safety glass
- frame and all removable parts connected with grounding cables
- Cable entries at the top and bottom, in the back wall as well as in the roof and in the floor

TECHNICAL DATA

Dimensions (H x W x D)	770mm/600mm/615mm
Weight	29,7 kg
Material	Steel sheet
Color	grey

STAND CABINET 15HU/19"

SSG 15HE

Art no.: 37124

STAND CABINET 15HU/19"

PRODUCT INFORMATION

- With glass door / 600 x 600mm
- 19" standcabinet with IP20 degree of protection
- welded steel construction with removable sidepanels
- Solid glass door with 4 mm thick safety glass
- Recommended maximum load 400 kg
- frame and all removable parts connected with grounding cables
- Cable entries with breakable covers are located at the top and bottom

TECHNICAL DATA

Dimensions (H x W x D)	770mm/600mm/600mm
Weight	38 kg
Material	Steel sheet
Color	grey

**STAND CABINET 22U/19" SSG 22HE**  
**Art no.: 37125**

STAND CABINET 22U/19"

**PRODUCT INFORMATION**

- With glass door / 600 x 600mm
- 19" standcabinet with IP20 degree of protection
- welded steel construction with removable sidepanels
- Solid glass door with 4 mm thick safety glass
- Recommended maximum load 400 kg
- frame and all removable parts connected with grounding cables
- Cable entries with breakable covers are located at the top and bottom

**TECHNICAL DATA**

Dimensions (H x W x D)	1080mm/600mm/600mm
Weight	47 kg
Material	Steel sheet
Color	grey

**STAND CABINET 27HU/19" SSG 27HE**  
**Art no.: 37126**

STAND CABINET 27HU/19"

**PRODUCT INFORMATION**

- With glass door / 600 x 600mm
- 19" standcabinet with IP20 degree of protection
- welded steel construction with removable sidepanels
- Solid glass door with 4 mm thick safety glass
- Recommended maximum load 400 kg
- frame and all removable parts connected with grounding cables
- Cable entries with breakable covers are located at the top and bottom

**TECHNICAL DATA**

Dimensions (H x W x D)	1300mm/600mm/600mm
Weight	54 kg
Material	Steel sheet
Color	grey

**STAND CABINET SWIVEL FRAME 24U/19"** **SSOT DR 24HE**

**Art no.: 37128**

STAND CABINET SWIVEL FRAME 24U/19"

**PRODUCT INFORMATION**

- Swivel frame, 24 U 19", without door, 800/600/1300mm
- 19" standcabinet with IP20 degree of protection
- welded steel frame with sidepanels screwed from the inside
- The 19" swivel frame is supported by a heavy-duty roller
- Load capacity of the frame 300 kg
- frame and all removable parts connected with grounding cables
- Above and below the rear wall there are ventilation grilles with filter

**TECHNICAL DATA**

Dimensions (H x W x D)	1300mm/800mm/600mm
Material	Steel sheet
Color	grey

**STAND CABINET SWIVEL FRAME 30U/19"** **SSOT DR 30HE**

**Art no.: 37129**

STAND CABINET SWIVEL FRAME 30U/19"

**PRODUCT INFORMATION**

- Swivel frame, 30 U 19", without door, 800/600/1525mm
- 19" standcabinet with IP20 degree of protection
- welded steel frame with sidepanels screwed from the inside
- The 19" swivel frame is supported by a heavy-duty roller
- Tragkraft des Rahmens 300 kg
- frame and all removable parts connected with grounding cables
- Above and below the rear wall there are ventilation grilles with filter

**TECHNICAL DATA**

Dimensions (H x W x D)	1525mm/800mm/600mm
Material	Steel sheet
Color	grey

STAND CABINET 32U/19"

SSG 32HE

Art no.: 37127

STAND CABINET 32U/19"

PRODUCT INFORMATION

- With glass door / 600 x 600mm
- 19" standcabinet with IP20 degree of protection
- welded steel construction with removable sidepanels
- Solid glass door with 4 mm thick safety glass
- Recommended maximum load 400 kg
- frame and all removable parts connected with grounding cables
- Cable entries with breakable covers are located at the top and bottom

TECHNICAL DATA

Dimensions (H x W x D)	1525mm/600mm/600mm
Weight	60 kg
Material	Steel sheet
Color	grey

STAND CABINET SWIVEL FRAME 40U/19"

SSOT DR 40HE

Art no.: 37130

STAND CABINET SWIVEL FRAME 40U/19"

PRODUCT INFORMATION

- Swivel frame, 40 U 19", without door, 800/600/1970mm
- 19" standcabinet with IP20 degree of protection
- welded steel frame with sidepanels screwed from the inside
- The 19" swivel frame is supported by a heavy-duty roller
- Load capacity of the frame 300 kg
- frame and all removable parts connected with grounding cables
- Above and below the rear wall there are ventilation grilles with filter

TECHNICAL DATA

Dimensions (H x W x D)	1970mm/800mm/600mm
Material	Steel sheet
Color	grey

DOOR FOR SWIVEL FRAME CABINET 24U

SSTD R 24HE

Art no.: 37131

Door for swivel frame cabinet 24U

PRODUCT INFORMATION

- Door for swivel frame cabinet 24U

DOOR FOR SWIVEL FRAME CABINET 30U	SSTDR 30HE
<b>Art no.: 37132</b>	

Door for swivel frame cabinet 30U	PRODUCT INFORMATION
	<ul style="list-style-type: none"> <li>• Door for swivel frame cabinet 30U</li> </ul>

DOOR FOR SWIVEL FRAME CABINET 40U	SSTDR 40HE
<b>Art no.: 37133</b>	

Door for swivel frame cabinet 40U	PRODUCT INFORMATION
	<ul style="list-style-type: none"> <li>• Door for swivel frame cabinet 40U</li> </ul>

FAN UNIT	SSDR-L
<b>Art no.: 37134</b>	

Fan unit	PRODUCT INFORMATION
	<ul style="list-style-type: none"> <li>• for stand cabinet Swivel frame 24HE/30HE/40HE</li> </ul>

CASTOR SET	SS-R0
<b>Art no.: 37135</b>	

Castor Set	PRODUCT INFORMATION
	<ul style="list-style-type: none"> <li>• for stand cabinet 15U/22U/27U/32U</li> <li>• Recommended maximum load: 800 kg for all 4 castors</li> <li>• The cabinets height will increase 108 mm</li> <li>• 2 castors with locking device</li> </ul>

LIGHTING UNIT	SS-BS
<b>Art no.: 37136</b>	

Lighting unit	PRODUCT INFORMATION
	<ul style="list-style-type: none"> <li>• 19", 1U, with magnet</li> </ul>

SOFTWARE LICENCES TERM 1 YEAR	SWL SIMAXCONFIG
<b>Art no.: 37111</b>	

Software licences term 1 year	PRODUCT INFORMATION
	<ul style="list-style-type: none"> <li>• for using the PC software simaxCONFIG</li> </ul>

**SOFTWARE LICENSE IP INTERFACE TO MOSES - BMZ DC3500** **MOSES - BMZ DC3500**  
**Art no.: 37055**

Software license IP interface to MOSES - BMZ DC3500

**PRODUCT INFORMATION**

- Digital pilot tone monitor for monitoring up to four 100V speaker lines
- Checking the lines for admixed pilot tone signals
- 1 LED for signaling pilot tone detection
- 1 LED per line for signaling pilot tone errors
- 1 level control per line to control the sensitivity of pilot tone detection
- 2 digital inputs for monitoring interruption
- 6 digital outputs for Unterbr. / DLW start, pilot tone error per line, collective error
- Output for fuse monitoring

**TECHNICAL DATA**

Dimensions (H x W x D)	Module 3U, 7HP, depth 160mm
Weight	240 g
Material	Anodized aluminum
Color	Black
Current Consumption	90 mA
Operation Voltage	24 V DC

**SURGE ARRESTER FOR 1 X 100V LINE** **CITEL DS98L - 120**  
**Art no.: 37137**

Surge arrester for 1 x 100V line

**PRODUCT INFORMATION**

- CITEL DS98L - 120
- Compact Type 2+3 Surge Protection Device
- Conductivity per pole: In= 5 kA; Imax= 10 kA Itotal= 20 kA
- Complies with IEC 61643-11 and EN 61643-11 standards
- Screw terminal 1.5-2.5 mm<sup>2</sup>
- Monoblock housing for DIN rail mounting

**TECHNICAL DATA**

Dimensions (H x W x D)	90mm/18mm/58mm
------------------------	----------------

**SURGE ARRESTER 230V** **CITEL DS98S-400**  
**Art no.: 37138**

Surge arrester 230V

**PRODUCT INFORMATION**

- CITEL DS98S-400
- Compact single-phase surge protection
- In : 5kA, Imax : 15A
- Compliant with EN 61643-11 / IEC 61643-11 and UL1449 ed.5
- Screw terminal 1.5-2.5 mm<sup>2</sup>
- Monoblock housing for DIN rail mounting

**TECHNICAL DATA**

Dimensions (H x W x D)	90mm/18mm/58mm
------------------------	----------------

MAINS FILTER - EMV - OVERVOLTAGE PROTECTION	ÜSS-230/250V
<b>Art no.: 37139</b>	

MAINS FILTER - EMV - OVERVOLTAGE PROTECTION

MAINS FILTER 250V / 16A	NF 250 V
<b>Art no.: 37140</b>	

MAINS FILTER 250V / 16A

COMBI PLAYER / TUNER CD400UDAB-TASCAM	19" 1 HE CD/SD/USB/BLUETOOTH
<b>Art no.: 37141</b>	

Combi Player / Tuner CD400UDAB-Tascam

#### PRODUCT INFORMATION

- 19" 1 HE CD/SD/USB/Bluetooth
- Frequency range: FM: 87.5-108 MHz - DAB: Band III, 174-240 MHz
- Antenna connector: F-socket, 50 Ω, unbalanced
- AUX analog input (unbalanced): 3.5mm stereo mini jack
- Analog audio outputs (main, balanced): XLR-3-31
- Analog audio outputs (main, unbalanced): RCA jacks

#### TECHNICAL DATA

Dimensions (H x W x D)	47mm/483mm/296mm
Weight	3,3 kg

LINE MONITORING DW4-1, WORKING RANGE 5 - 400 MA	DW4-1
<b>Art no.: 37143</b>	

Line monitoring DW4-1

#### PRODUCT INFORMATION

- For load current 5mA - 3A
- Monitoring also in idle condition
- Optimized for flashlights and sirens
- Short circuit proof, 30s
- Status display in front panel
- Fault signal output, N/C, analog switch
- Supply 24VDC

#### TECHNICAL DATA

Dimensions (H x W x D)	17,5x70,4x90,5mm
------------------------	------------------

LINE MONITORING DW4-2, WORKING RANGE 0.32 - 3 A

DW4-2

Art no.: 37144

| Line monitoring DW4-2

## PRODUCT INFORMATION

- For load current 5mA - 3A
- Monitoring also in idle condition
- Optimized for flashlights and sirens
- short-circuit proof
- Status display in front panel
- Fault signal output, N/C, analog switch
- Supply 24VDC

## TECHNICAL DATA

Dimensions (H x W x D)	17,5x70,4x90,5mm
------------------------	------------------

USB - RS232 ADAPTER - WINDOWS XP / WIN7 DRIVER

USB - RS232 ADAPTER

**Art no.: 37114**

USB - RS232 Adapter - Windows XP / Win7 driver

### PRODUCT INFORMATION

- For computers / laptops without an RS 232 interface in connection with the simaxCONFIG software

DYN. HAND-HELD MICROPHONE WITH BUTTON

MH-50-D.1

**Art no.: 37115**

Dyn. hand-held microphone with button

### PRODUCT INFORMATION

- Coiled cable with an open end, for mounting on front panels or similar using the MH50 bracket



# VOICE ALARM SYSTEMS VA/PA

## LOUDSPEAKERS



**Targeted information** – safe evacuation.

# ALL'S WELL THAT ENDS WELL!

## Loudspeakers for the voice alarm system VA/PA

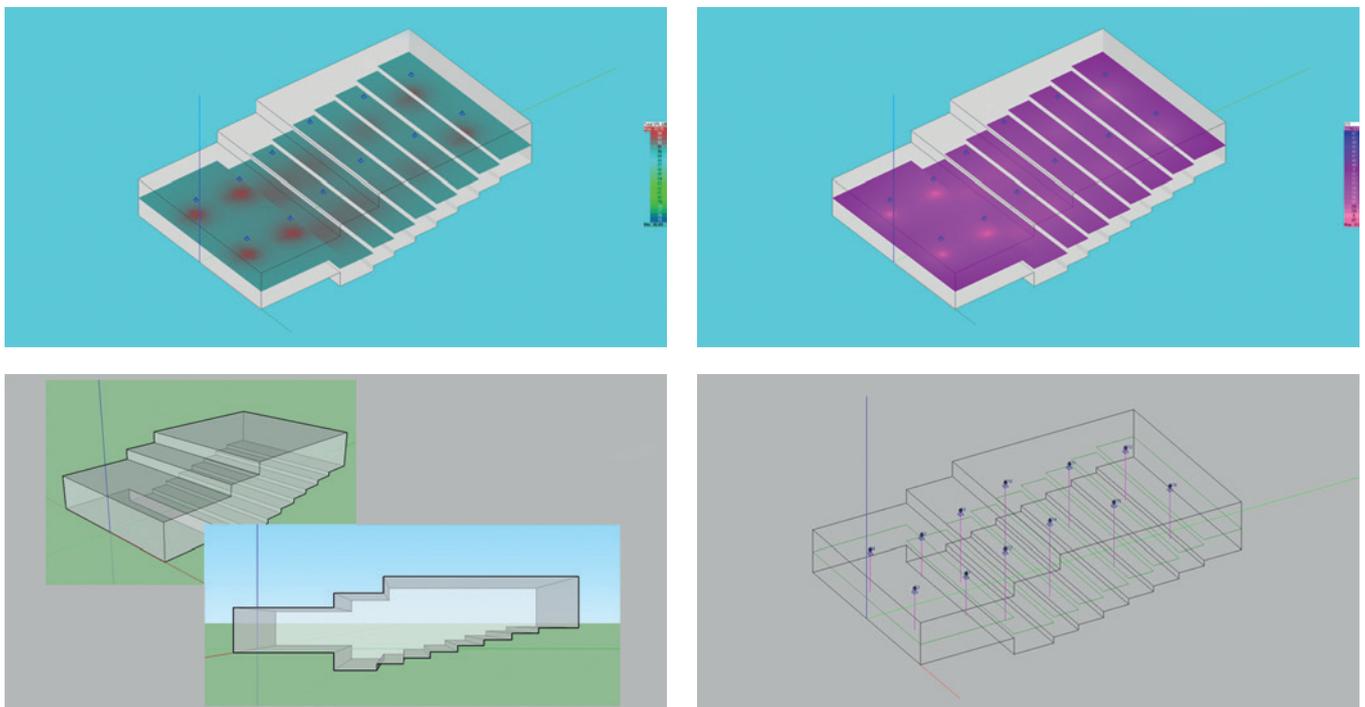
The right loudspeakers are an important part of a VA/PA. Careful planning of the loudspeakers is indispensable in order to achieve the desired values for sound level, frequency response, uniformity and, above all, speech intelligibility.

An individual selection must be made depending on the requirements and the properties of the room in question. The following aspects are important for the loudspeaker type: Sound pressure/sensitivity, directional effect, individual chassis or A/B loudspeakers, frequency response, IP protection grade, certification etc.

The following parameters must be considered during planning: number of required systems in the room, orientation, power adaptation, equalisation, etc.

However, in principle, reaching standard-compliant speech intelligibility is primarily also dependent on the acoustic properties of the room. In this case, an excessive reverberation time (RT60) or too much noise may have a negative effect on and considerably reduce the required value for the speech transmission index (STI). In the event of doubt, a computer simulation of the room acoustics under these framework conditions will be required.

The normative requirements for responsibility in terms of the structural and / or acoustic requirements of a room are defined in DIN VDE 0833-4.



Example room, display of different values created in a 3D computer simulation.

**Our employees would be happy to help with the selection and planning of the right loudspeaker system in order to provide an attractive offer for your project.**



Ceiling speaker, 6 W, 100 V, certified according EN 54-24, compliant BS 5839

PRODUCT INFORMATION

- waterproofed 130 mm full range speaker
- equipped with ceramic block and thermal fuse
- Metal-housing
- The wires are additional secured through a wire protection
- Mounting by 3 spring clamps with cropped leg spring
- increased clamp force and shortened tension distance
- With fire dome for a higher passive security
- RoHS-compliant
- Rated voice/noise power 100 V (Watt): 6/3/1,5
- Frequency range (Hz): 350 - 13.800
- Frequency response IEC268-5(-10dB)(Hz): 84 - 16.300
- SPL IEC268-5, 1 W/1 m (dB): 98,4
- SPL IEC268-5, 1 W/4 m (dB): 86,4
- SPL IEC268-5, Pmax./4 m (dB): 94,1
- Sensitivity EN54-24, 1 W/4 m (dB): 80,0
- Ceiling cut out (mm): 167
- Dispersion angle-6 dB, 500 Hz: 180°
- Dispersion angle-6 dB, 1 kHz: 180°
- Dispersion angle-6 dB, 2 kHz: 120°
- Dispersion angle-6 dB, 4 kHz: 65°

TECHNICAL DATA

Dimensions (H x W x D)	Dimensions (mm): Ø 180x106
Weight	Weight (kg): 1,17
Color	Colour: RAL 9010

## CEILING SPEAKER

SMX-EN-D6W-130-LC

Art no.: 37501



Ceiling speaker, 6 watt, 100 volt, certified according to EN 54-24, BS 5839 compliant

## PRODUCT INFORMATION

- waterproofed 130 mm full range speaker
- high quality PET plastic contact protection
- Innovative air flow system for sound properties
- Metal housing, extremely flat design
- protection class IP 21C
- 3 spring clamps with cropped leg
- increased clamp force and shortened tension
- 4-pin screw terminal
- RoHS compliant
- Rated voice/noise power 100 V (Watt): 6/3/1,5
- Frequency range (Hz): 104 - 17.200
- Frequency response IEC268-5 (-10dB)(Hz): 57 - 24.000
- SPL IEC268-5, 1 W/1 m (dB): 98,3
- SPL IEC268-5, 1 W/4 m (dB): 86,3
- SPL IEC268-5, Pmax./4 m (dB): 94,0
- Sensitivity EN54-24, 1 W/4 m (dB): 74,8
- Ceiling cut out (mm): 156
- Dispersion angle-6 dB, 500 Hz: 180°
- Dispersion angle-6 dB, 1 kHz: 180°
- Dispersion angle-6 dB, 2 kHz: 140°
- Dispersion angle-6 dB, 4 kHz: 85°

## TECHNICAL DATA

Dimensions (H x W x D)	Dimensions (mm): Ø 181,5x66
Weight	Weight (kg): 0,51
Color	Colour: RAL 9016



Ceiling speaker, 6 W, 100 V, certified according EN 54-24, compliant BS 5839

### PRODUCT INFORMATION

- waterproofed 165 mm full range speaker
- with ceramic block and thermal fuse
- Powder-coated metal housing
- wire protection
- 3 spring clamps with cropped leg spring
- increased clamp force and shortened tension distance
- firedome for a higher passive security
- RoHS-compliant
- Rated voice/noise power 100 V (Watt): 6/3/1,5
- Frequency range (Hz): 404 - 10.100
- Frequency response IEC268-5(-10dB)(Hz): 80 - 24.000
- SPL IEC268-5, 1 W/1 m (dB): 102,5
- SPL IEC268-5, 1 W/4 m (dB): 90,5
- SPL IEC268-5, Pmax./4 m (dB): 98,2
- Sensitivity EN54-24, 1 W/4 m (dB): 81,0
- Ceiling cut out (mm): 198
- Dispersion angle-6 dB, 500 Hz: 180°
- Dispersion angle-6 dB, 1 kHz: 175°
- Dispersion angle-6 dB, 2 kHz: 100°
- Dispersion angle-6 dB, 4 kHz: 50°

### TECHNICAL DATA

Dimensions (H x W x D)	Dimensions (mm): Ø 220x112
Weight	Weight (kg): 1,36
Color	Colour: RAL 9010

## CEILING SPEAKER

SMX-EN-D6W-165-LC

Art no.: 37503



Ceiling speaker, 6 watt, 100 volt, certified according to EN 54-24, BS 5839 compliant

## PRODUCT INFORMATION

- waterproofed 165 mm full range speaker
- high quality PET plastic contact protection
- Innovative air flow system for sound properties
- Metal housing, extremely flat design
- protection class IP 21C
- 3 spring clamps with cropped leg spring
- increased clamp force and shortened tension
- 4-pin screw terminal
- RoHS compliant
- Rated voice/noise power 100 V (Watt): 6/3/1,5
- Frequency range (Hz): 300 - 19.300
- Frequency response IEC268-5 (-10dB)(Hz): 70 - 23.500
- SPL IEC268-5, 1 W/1 m (dB): 100,2
- SPL IEC268-5, 1 W/4 m (dB): 88,2
- SPL IEC268-5, Pmax./4 m (dB): 95,9
- Sensitivity EN54-24, 1 W/4 m (dB): 79,2
- Ceiling cut out (mm): 166
- Dispersion angle-6 dB, 500 Hz: 180°
- Dispersion angle-6 dB, 1 kHz: 180°
- Dispersion angle-6 dB, 2 kHz: 135°
- Dispersion angle-6 dB, 4 kHz: 60°

## TECHNICAL DATA

Dimensions (H x W x D)	Dimensions (mm): Ø 199x76
Weight	Weight (kg): 0,68
Color	Colour: RAL 9016



2-Way Ceiling speaker, 10 W, 100 V,  
certified according EN 54-24, compliant BS 5839

PRODUCT INFORMATION

- waterproofed
- powder-coated metal housing
- ceramic block and thermal fuse
- 2-way-technology
- wire protection
- 3 spring clamps with cropped leg spring
- increased clamp force and shortened tension distance
- fireproof for a higher passive security
- RoHS-compliant
- Rated voice/noise power 100 V (Watt): 10/6/3/1,5
- Frequency range (Hz): 275 - 23.500
- Frequency response IEC268-5 (-10dB)(Hz): 65 - 24.000
- SPL IEC268-5, 1 W/1 m (dB): 91,2
- SPL IEC268-5, 1 W/4 m (dB): 79,2
- SPL IEC268-5, Pmax./4 m (dB): 89,2
- Sensitivity EN54-24, 1 W/4 m (dB): 74,0
- Ceiling cut out (mm): 201
- Dispersion angle-6 dB, 500 Hz: 180°
- Dispersion angle-6 dB, 1 kHz: 155°
- Dispersion angle-6 dB, 2 kHz: 115°
- Dispersion angle-6 dB, 4 kHz: 50°

TECHNICAL DATA

Dimensions (H x W x D)	Dimensions (mm): Ø 220x134
Weight	Weight (kg): 1,87
Color	Colour: RAL 9010

## 2-WAY CEILING SPEAKER

SMX-EN-D20W-200-2W

Art no.: 37505



2-Way Ceiling speaker, 20 W, 100 V,  
certified according EN 54-24, compliant BS 5839

## PRODUCT INFORMATION

- waterproofed
- powder-coated metal housing
- ceramic block and thermal fuse
- 2-way-technology
- wire protection
- 3 spring clamps with cropped leg spring
- increased clamp force and shortened tension distance
- fireproof for a higher passive security
- RoHS-compliant
- Rated voice/noise power 100 V (Watt): 20/15/10/5
- Frequency range (Hz): 223 - 21.100
- Frequency response IEC268-5 (-10dB)(Hz): 40 - 22.500
- SPL IEC268-5, 1 W/1 m (dB): 97,6
- SPL IEC268-5, 1 W/4 m (dB): 85,6
- SPL IEC268-5, Pmax./4 m (dB): 98,6
- Sensitivity EN54-24, 1 W/4 m (dB): 76,0
- Ceiling cut out (mm): 243
- Dispersion angle-6 dB, 500 Hz: 180°
- Dispersion angle-6 dB, 1 kHz: 155°
- Dispersion angle-6 dB, 2 kHz: 80°
- Dispersion angle-6 dB, 4 kHz: 65°

## TECHNICAL DATA

Dimensions (H x W x D)	Dimensions (mm): Ø 267x194
Weight	Weight (kg): 3,42
Color	Colour: RAL 9010



Ceiling speaker, 6 W, 100 V, certified according EN 54-24, compliant BS 5839, ball proof, concrete built-in dome

PRODUCT INFORMATION

- impregnated 165 mm full range speaker
- ball proof
- ceramic block and thermal fuse
- fire dome made of steel with 3 functions:
  - - fire dome (with fire retarding coating)
  - - built-in dome
  - - electroacoustical housing
- British standard BS5839
- Ball proof according to DIN 18032 part 3
- Certified fire protection class B2 according to DIN 4102
- quick mounting is done without screws via 2 spring clamps
- Delivery includes 2 cable exits with PG16
- RoHS-compliant
- Rated voice/noise power 100 V (Watt): 6/3/1,5
- Frequency range (Hz): 125 - 23.500
- Frequency response IEC268-5(-10dB)(Hz): 100 - 23.500
- SPL IEC268-5, 1 W/1 m (dB): 104,5
- SPL IEC268-5, 1 W/4 m (dB): 92,5
- SPL IEC268-5, Pmax./4 m (dB): 100,2
- Sensitivity EN54-24, 1 W/4 m (dB): 80,0
- Ceiling cut out (mm): 201
- Dispersion angle-6 dB, 500 Hz: 180°
- Dispersion angle-6 dB, 1 kHz: 180°
- Dispersion angle-6 dB, 2 kHz: 97°
- Dispersion angle-6 dB, 4 kHz: 44°

TECHNICAL DATA

Dimensions (H x W x D)	Dimensions (mm): Ø 232x98,5
Weight	Weight (kg): 1,65
Color	Colour: RAL 9010

## FRAMELESS CEILING SPEAKER

SMX-EN-D6W-130-RL

Art no.: 37507



Frameless ceiling speaker, 6 W, 100 V,  
certified according EN 54-24

## PRODUCT INFORMATION

- 130mm impregnated chassis
- powder-coated metal housing
- high grade transformer with 1/1-1/2-1/4 power-tappings
- finely perforated speaker grille
- quick fit spring mounting with short clamping travel
- protective caps at the spring ends to minimize vibrations
- rubber grommet in the firedome
- WAGO Compact 221 terminal block
- for a ceiling thickness of approx. 1 - 45 mm
- RoHS-compliant
- Rated voice/noise power 100 V (Watt): 6/3/1.5
- Frequency range (Hz): 80 - 20.000
- Frequency response IEC268-5(-10dB)(Hz): 64 - 21.500
- SPL IEC268-5, 1 W/1 m (dB): 97,0
- SPL IEC268-5, 1 W/4 m (dB): 78,0
- SPL IEC268-5, Pmax./4 m (dB): 92,7
- Sensitivity EN54-24, 1 W/4 m (dB): 78,0
- Ceiling cut out (mm): 161 - 167
- Dispersion angle-6 dB, 500 Hz: 180°
- Dispersion angle-6 dB, 1 kHz: 180°
- Dispersion angle-6 dB, 2 kHz: 150°
- Dispersion angle-6 dB, 4 kHz: 75°

## TECHNICAL DATA

Dimensions (H x W x D)	Dimensions (mm): Ø 180 x 99
Weight	Weight (kg): 0,78
Color	Colour: RAL 9016



Frameless ceiling speaker, 6 W, 100 V,  
certified according EN 54-24

PRODUCT INFORMATION

- 165mm impregnated chassis
- powder-coated metal housing
- high grade transformer with 1/1-1/2-1/4 power-tappings
- finely perforated speaker grille
- quick fit spring mounting with short clamping travel
- protective caps at the spring ends to minimize vibrations
- rubber grommet in the firedome
- WAGO Compact 221 terminal block
- for a ceiling thickness of approx. 1 - 45 mm
- RoHS-compliant
- Rated voice/noise power 100 V (Watt): 6/3/1.5
- Frequency range (Hz): 63 - 16.000
- Frequency response IEC268-5(-10dB)(Hz): 56 - 18.000
- SPL IEC268-5, 1 W/1 m (dB): 97,0
- SPL IEC268-5, 1 W/4 m (dB): 85,0
- SPL IEC268-5, Pmax./4 m (dB): 92,7
- Sensitivity EN54-24, 1 W/4 m (dB): 85,0
- Ceiling cut out (mm): 194 - 202
- Dispersion angle-6 dB, 500 Hz: 180°
- Dispersion angle-6 dB, 1 kHz: 180°
- Dispersion angle-6 dB, 2 kHz: 150°
- Dispersion angle-6 dB, 4 kHz: 90°

TECHNICAL DATA

Dimensions (H x W x D)	Dimensions (mm): Ø 220 x 107
Weight	Weight (kg): 1,40
Color	Colour: RAL 9016

## FRAMELESS CEILING SPEAKER

SMX-EN-D10W-165-RL

Art no.: 37509



Frameless ceiling speaker, 10 W, 100 V,  
certified according EN 54-24

## PRODUCT INFORMATION

- 165mm impregnated chassis
- powder-coated metal housing
- high grade transformer with 1/1-1/2-1/4 power-tappings
- quick fit spring mounting with short clamping travel
- protective caps at the spring ends to minimize vibrations
- rubber grommet in the firedome
- WAGO Compact 221 terminal block
- suitable for a ceiling thickness of approx. 1 - 45 mm
- RoHS-compliant
- Power 10/5/2,5W
- Impedance (100V) 1000/2000/4000 ohm
- Frequency Range 63 -16.000 Hz
- Frequency Response 56 - 18.000 Hz
- SPL IEC268-5 , 1W/1m 92,0 dB
- SPL EN54-24, Pmax/4m 89,0 dB
- Sensitivity EN54-24, 1W/4m 81,4 dB
- Dispersion -6dB, 500Hz 180°
- Dispersion -6dB, 1KHz 175°
- Dispersion -6dB, 2KHz 150°
- Dispersion -6dB, 4KHz 94°
- IP Rating IP21
- Ceiling Cut-out 194 - 202 mm
- Maximum cable cross section 4mm<sup>2</sup>
- Max. cable cross section loop 4mm<sup>2</sup>

## TECHNICAL DATA

Dimensions (H x W x D)	Dimensions 220x104mm
Weight	Weight (net) 1,1 kg
Color	Colour RAL 9016



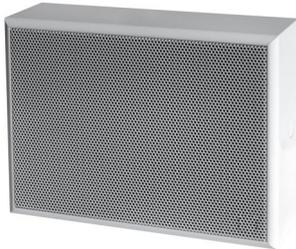
Frameless ceiling speaker, 20 W, 100 V,  
certified according EN 54-24

#### PRODUCT INFORMATION

- 200mm impregnated chassis
- powder-coated metal housing
- high grade transformer with 1/1-1/2-1/4 power-tappings
- quick fit spring mounting with short clamping travel
- protective caps at the spring ends to minimize vibrations
- rubber grommet in the firedome
- WAGO Compact 221 terminal block
- suitable for a ceiling thickness of approx. 1 - 45 mm
- finely perforated speaker grille
- RoHS-compliant
- Power 20/10/5 W
- Impedance (100V) 500/1000/2000 ohm
- Frequency Range 60 - 17.500 Hz
- Frequency Response 100 -20.000 Hz
- SPL IEC268-5 , 1W/1m 94,8 dB
- SPL EN54-24, Pmax/4m 95,4 dB
- Sensitivity EN54-24, 1W/4m 85,2 dB
- Sensitivity EN54-24, 1W/1m 97,8 dB
- Dispersion -6dB, 500Hz 180°
- Dispersion -6dB, 1KHz 155°
- Dispersion -6dB, 2KHz 100°
- Dispersion -6dB, 4KHz 60°
- IP Rating IP21
- Ceiling Cut-out 246 - 252mm
- Maximum cable cross section 4mm<sup>2</sup>

#### TECHNICAL DATA

Dimensions (H x W x D)	Dimensions 265x115 mm
Weight	Weight (net) 1,60 kg
Color	Colour RAL 9016



Wand-Aufbaulautsprecher, soft-line, 6 Watt, MDF, weiß, mit Thermosicherung und Keramikklebme, Zertifizierung gemäß EN 54-24, BS 5839 konform, IP54, 1438-CPR-0231

#### PRODUCT INFORMATION

- 165mm full range speaker
- ceramic block and thermal fuse
- Film-coated MDF-wood housing
- IP 54 protection standard
- connection-clamp equipped with a wire protection
- Mounting by spring clamp on the rear plate
- Installation via a connector terminal block
- RoHS-compliant
- Rated voice/noise power 100 V (Watt): 6/3/1,5
- Frequency range (Hz): 197 - 21.900
- Frequency response IEC268-5 (-10dB)(Hz): 175 - 23.500
- SPL IEC268-5, 1 W/1 m (dB): 100,6
- SPL IEC268-5, 1 W/4 m (dB): 88,6
- SPL IEC268-5, Pmax./4 m (dB): 96,3
- Sensitivity EN54-24, 1 W/4 m (dB): 81,0
- Dispersion angle-6 dB, 500 Hz: h=180° v=180°
- Dispersion angle-6 dB, 1 kHz: h=160° v=160°
- Dispersion angle-6 dB, 2 kHz: h=125° v=125°
- Dispersion angle-6 dB, 4 kHz: h=89° v=89°

#### TECHNICAL DATA

Dimensions (H x W x D)	Dimensions (mm): Ø 252x192x82
Weight	Weight (kg): 1,95
Color	Colour: white

SURFACE-MOUNTED SPEAKER

SMX-EN-DA10W-165

Art no.: 37512



Surface-mounted Speaker, 10 W, 100 V, certified according EN 54-24, compliant BS 5839

PRODUCT INFORMATION

- surface-mounted waterproofed ceiling speaker
- UV-resistant
- made of powder-coated metal
- white (RAL 9010)
- 165 mm full range speaker
- ceramic block and thermal fuse
- Vandal proof
- connection-clamp with a wire protection
- Installation onto walls and ceilings by hidden mounting brackets
- Installation via a clamp
- RoHS-compliant
- Rated voice/noise power 100 V (Watt): 10/6/3/1,5
- Frequency range (Hz): 290 - 23.400
- Frequency response IEC268-5 (-10dB)(Hz): 230 - 24.000
- SPL IEC268-5, 1 W/1 m (dB): 102,2
- SPL IEC268-5, 1 W/4 m (dB): 90,2
- SPL IEC268-5, Pmax./4 m (dB): 100,2
- Sensitivity EN54-24, 1 W/4 m (dB): 81,0
- Dispersion angle-6 dB, 500 Hz: 180°
- Dispersion angle-6 dB, 1 kHz: 180°
- Dispersion angle-6 dB, 2 kHz: 105°
- Dispersion angle-6 dB, 4 kHz: 50°

TECHNICAL DATA

Dimensions (H x W x D)	Dimensions (mm): Ø 170x75
Weight	Weight (kg): 1,23
Color	Colour: RAL 9010

SURFACE-MOUNTED METAL CEILING SPEAKER FOR A/B-CABLING

SMX-EN-DA6W-100-AB

Art no.: 37513



Surface-mounted metal ceiling speaker for A/B-cabling, 2x6W, 100V, certified EN 54-24, BS 5839 compliant

PRODUCT INFORMATION

- for redundant cabling (A/B-cabling)
- suitable for music and speech reproduction
- Powder-coated metal housing in RAL 9016
- sturdy metal grille
- 2 waterproofed oval-fullrange speakers
- 2 high grade transformers with 1/1-1/2-1/4 power-tappings
- 2 ceramic blocks and 2 thermal fuses integrated
- fixed by screws on the ceiling
- RoHS-compliant
- Rated voice/noise power 100 V (Watt): 2 x 6/3/1,5
- Frequency range (Hz): 182 - 17.400 (single), 279 - 17.600 (double)
- Frequency response IEC268-5 (-10dB)(Hz): 192 - 23.500 (single), 197 - 23.500 (double)
- SPL IEC268-5, 1 W/1 m (dB): 97,6 (single), 102,9 (double)
- SPL IEC268-5, 1 W/4 m (dB): 85,6 (single), 90,9 (double)
- SPL IEC268-5, Pmax./4 m (dB): 93,3 (single), 98,6 (double)

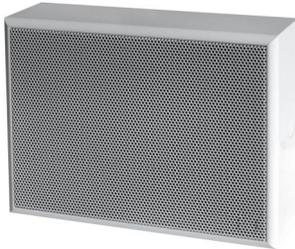
TECHNICAL DATA

Dimensions (H x W x D)	Dimensions (mm): Ø 208x89
Weight	Weight (kg): 1,9
Color	Colour: RAL 9010

## WALL MOUNTED SPEAKER FOR A/B-CABLING

SMX-EN-W6W-100-AB

Art no.: 37514



Wall mounted Speaker for A/B-cabling, 12 W, 100 V,  
certified according EN 54-24, compliant BS 5839

## PRODUCT INFORMATION

- for redundant cabling (A/B-cabling)
- MDF-housing with white powder-coating
- spring clamps at the rear panel for easy mounting
- suitable for music and speech reproduction
- metal grille
- 2 waterproofed 5" oval- fullrange speakers
- 2 high grade transformers with 1/1-1/2-1/4 power-tappings
- 2 ceramic blocks and 2 thermal fuses
- IP54
- Rated voice/noise power 100 V (Watt): 2 x 6/3/1,5
- Frequency range (Hz): Single 227-14.600 Hz/Double 224-14 300
- Frequency response IEC268-5 (-10dB) (Hz): Single 165-23.500/Double 162-23.500
- SPL IEC268-5, 1 W/1 m (dB): Single 100,7 / Double 105,9
- SPL IEC268-5, 1 W/4 m (dB): Single 88,7 / Double 93,9
- SPL IEC268-5, Pmax./4 m (dB): Single 96,4 / Double 101,6
- Sensitivity EN54-24, 1W/4m (dB): 79,6
- Speaker: 2x 5" oval- fullrange speaker
- Impedance (Chassis): 2x 8 Ohm
- Dispersion angle -6 dB, 500 Hz: H: Single/ Double 175°, V: Single/ Double 180°
- Dispersion angle -6 dB, 1 kHz: H: Single 180°/ Double 145°, V: Single 160°/ Double 130°
- Dispersion angle -6 dB, 2 kHz: H: Single 150°/ Double 90°, V: Single 90°/ Double 80°
- Dispersion angle -6 dB, 4 kHz: H: Single 105°/Double 90°, V: Single 50°/ Double 40°

## TECHNICAL DATA

Dimensions (H x W x D)	Dimension (mm): 254 x 195 x 81
Weight	Weight (kg): 2,24
Color	Colour: white



Metal Ceiling Speaker for A/B-cabling, 12W, 100V,  
certified according EN 54-24, compliant BS 5839

### PRODUCT INFORMATION

- 12W speaker, for redundant cabling (A/B-cabling)
- Powder-coated metal housing
- with 3 spring clamps for easy mounting
- suitable for music and speech reproduction
- metal grille
- 2 waterproofed 6" oval- fullrange speakers
- 2 high grade transformers with 1/1-1/2-1/4 power taps
- 2 ceramic blocks and 2 thermal fuses
- fire-dome for a higher passive security
- Suitable for ceiling or wall-mounting
- Rated voice/noise power 100 V (Watt): 2 x 6/3/1,5
- Frequency range (Hz): Single 162 - 18.600 / Double 159 - 16.000
- Frequency response IEC268-5(-10dB)(Hz): Single 125 - 23.500 / Double 120 - 23.500
- SPL IEC268-5, 1 W/1 m (dB): Single 98,4 / Double 104,8
- SPL IEC268-5, 1 W/4 m (dB): Single 86,4 / Double 92,8
- SPL IEC268-5, Pmax./4 m (dB): Single 94,1 / Double 100,5
- Sensitivity EN54-24, 1 W/4 m: 77,0
- Ceiling cut-out (mm): 243
- Dispersion angle-6 dB, 500 Hz: Horizontal, Single/ Double: 180° / Vertikal, Single/ Double: 180°
- Dispersion angle-6 dB, 1 kHz: Horizontal, Single/ Double: 160° / Vertikal, Single/ Double: 160°
- Dispersion angle-6 dB, 2 kHz: Horizontal, Single/ Double: 120°/ 75° / Vertikal, Single/ Double: 160°/ 90°
- Dispersion angle-6 dB, 4 kHz: Horizontal, Single/ Double: 65°/ 40° / Vertikal, Single/ Double: 120°/ 60°

### TECHNICAL DATA

Dimensions (H x W x D)	Dimensions (mm): Ø 267 x 138
Weight	Weight (kg): 2,16
Color	Colour: RAL 9010

## METAL CEILING SPEAKER FOR A/B-CABLING

SMX-EN-D6W-100-AB-LC

Art no.: 37516



Metal ceiling speaker for A/B-cabling, 2x6W, 100V,  
certified EN 54-24, BS 5839 compliant

## PRODUCT INFORMATION

- for redundant cabling (A/B-cabling)
- Powder-coated metal housing in RAL 9016
- with 3 spring clamps for easy mounting
- with high quality plastic contact protection
- suitable for music and speech reproduction
- sturdy metal grille
- 2 waterproofed oval-fullrange speakers
- 2 high grade transformers with 1/1-1/2-1/4 power-tappings
- 2 ceramic blocks and 2 thermal fuses
- flat construction method allows a very low mounting depth
- protection class IP 21C
- RoHS-compliant.
- Rated voice/noise power 100 V (Watt): 2 x 6/3/1,5
- Frequency range (Hz): 103 - 20.100 (single) / 107 - 19.600 (double)
- Frequency response IEC268-5 (-10dB) (Hz): 96 - 23.300 (single) / 101 - 22.900 (double)
- SPL IEC268-5, 1 W/1 m (dB): 88,0 (single) / 94,0 (double)
- SPL IEC268-5, 1 W/4 m (dB): 76,0 (single) / 82,0 (double)
- SPL IEC268-5, Pmax./4 m (dB): 83,7 (single) / 89,7 (double)

## TECHNICAL DATA

Dimensions (H x W x D)	Dimensions (mm): Ø 246x68
Weight	Weight (kg): 1,1
Color	Colour: RAL 9016



Horn speaker, 10W, 100V,  
certified EN 54-24, BS 5839 compliant

### PRODUCT INFORMATION

- transformer with 4 power adjustments
- impact-resistant ABS housing UL94V0 in RAL 7035
- ceramic block and a thermal fuse
- protection class IP 66
- PG11 cable glands on the back of the speaker
- U-shaped, stainless steel universal mount
- according EN 54-24, an equalizer has to be used as described in the user manual
- Power 10/5/2,5/1,25 (20) W
- Frequency Range 569 - 7.000 Hz
- Frequency Response 370 - 13.600 Hz
- SPL IEC268-5 , 1W/1m 95,0 dB
- SPL EN54-24, Pmax/4m 91,0 dB
- Sensitivity EN54-24, 1W/4m 83,0 dB
- Sensitivity EN54-24, 1W/1m 95,0 dB
- Dispersion -6dB, 500Hz h/v 360°
- Dispersion -6dB, 1KHz h/v 360°
- Dispersion -6dB, 2KHz h/v 105°
- Dispersion -6dB, 4KHz h/v 50°
- IP Rating IP66
- Temperature range -25 / +70 C°
- Maximum cable cross section 8mm<sup>2</sup>
- Max. cable cross section loop 2x2mm<sup>2</sup>

### TECHNICAL DATA

Dimensions (H x W x D)	Dimensions 142x256 mm
Weight	Weight (net) 1,9 kg
Color	Colour RAL 7035

## HORN SPEAKER

SMX-EN-DK15W

Art no.: 37518



Horn speaker, 15W, 100V,  
certified EN 54-24, BS 5839 compliant

## PRODUCT INFORMATION

- transformer with 4 power adjustments
- impact-resistant ABS housing UL94V0 in RAL 7035
- ceramic block and a thermal fuse
- protection class IP 66
- PG11 cable glands on the back of the speaker
- U-shaped, stainless steel universal mount
- according EN 54-24, an equalizer has to be used as described in the user manual
- Power 15/7,5/3,75/1,9(20) W
- Frequency Range 677 - 5.400 Hz
- Frequency Response 300 - 13.800 Hz
- SPL IEC268-5 , 1W/1m 95,0 dB
- SPL EN54-24, Pmax/4m 93,0 dB
- Sensitivity EN54-24, 1W/4m 83,0 dB
- Sensitivity EN54-24, 1W/1m 95,3 dB
- Dispersion -6dB, 500Hz h/v 360°
- Dispersion -6dB, 1KHz h/v 110°
- Dispersion -6dB, 2KHz h/v 70°
- Dispersion -6dB, 4KHz h/v 40°
- Temperature range -25 / +70 C°
- IP Rating IP66
- Maximum cable cross section 8mm<sup>2</sup>
- Max. cable cross section loop 2x2mm<sup>2</sup>

## TECHNICAL DATA

Dimensions (H x W x D)	Dimensions 209x321 mm
Weight	Weight (net) 2,08 kg
Color	Colour RAL 7035



Horn speaker, 30W, 100V,  
certified EN 54-24, BS 5839 compliant

PRODUCT INFORMATION

- transformer with 4 power adjustments
- impact-resistant ABS housing UL94V0 in RAL 7035
- ceramic block and a thermal fuse
- protection class IP 66
- PG11 cable glands on the back of the speaker
- U-shaped, stainless steel universal mount
- according EN 54-24, an equalizer has to be used as described in the user manual
- Power 30/20/10/5 (20) W
- Frequency Range 592 - 6.900 Hz
- Frequency Response 250 - 15.000 Hz
- SPL IEC268-5 , 1W/1m 97,0 dB
- SPL EN54-24, Pmax/4m 96,0 dB
- Sensitivity EN54-24, 1W/4m 85,0 dB
- Sensitivity EN54-24, 1W/1m 97,9 dB
- Dispersion -6dB, 500Hz h/v 155°
- Dispersion -6dB, 1KHz h/v 110°
- Dispersion -6dB, 2KHz h/v 65°
- Dispersion -6dB, 4KHz h/v 35°
- IP Rating IP66
- Temperature range -25 / +70 C°
- Maximum cable cross section 8mm<sup>2</sup>
- Max. cable cross section loop 2x2mm<sup>2</sup>

TECHNICAL DATA

Dimensions (H x W x D)	Dimensions 235x351 mm
Weight	Weight (net) 2,27 kg
Color	Colour RAL 7035

## HORN SPEAKER, 2-WAY-TECHNOLOGY

SMX-EN-DK30W-2W

Art no.: 37520



Horn speaker, 30 W, 100 V, 2-way-technology,  
certified according EN 54-24, compliant BS 5839

## PRODUCT INFORMATION

- ceramic block and thermal fuse
- Impact proof ABS-plastic glass fibre housing
- IP66 protection standard
- high weather-resistance
- for outdoor and industrial applications
- Wall- and ceiling mounting
- U-shaped V4A-metal bracket
- with a 1 m cabl
- Installation via screws
- RoHS-compliant
- Rated voice/noise power 100 V (Watt): 30/15/7,5/3,75
- Frequency range (Hz): 237 - 21.100
- Frequency response IEC268-5(-10dB)(Hz): 65 - 24.000
- SPL IEC268-5, 1 W/1 m (dB): 101,8
- SPL IEC268-5, 1 W/4 m (dB): 89,8
- SPL IEC268-5, Pmax./4 m (dB): 104,5
- Sensitivity EN54-24, 1 W/4 m (dB): 86,1
- Dispersion angle-6 dB, 500 Hz: Horizontal 190°/ Vertikal 205°
- Dispersion angle-6 dB, 1 kHz: Horizontal 70°/ Vertikal 90°
- Dispersion angle-6 dB, 2 kHz: Horizontal 85°/ Vertikal 90°
- Dispersion angle-6 dB, 4 kHz: Horizontal 80°/ Vertikal 110°

## TECHNICAL DATA

Dimensions(H x W x D)	Dimensions(mm): Ø 370x255x290
Weight	Weight (kg): 4,9
Color	Colour: RAL 7035

SOUND PROJECTOR

SMX-EN-SP10W-130

Art no.: 37521



Sound projector, 10 W, 100 V,  
certified according EN 54-24, compliant BS 5839

PRODUCT INFORMATION

- 130mm full-range loudspeaker
- 100V line transformer with 4 power adjustments
- ABS plastic housing in RAL9016
- solid aluminum mounting bracke
- ceramic block and a thermal fuse in a junction box
- Power 10/5/2,5/1,25 W
- Frequency Range 150 - 20.000 Hz
- Frequency Response 120 - 21.000 Hz
- SPL IEC268-5 , 1W/1m 87,0 dB
- SPL EN54-24, Pmax/4m 86,0 dB
- Sensitivity EN54-24, 1W/4m 75,0 dB
- Dispersion -6dB, 500Hz 360°
- Dispersion -6dB, 1KHz 252°
- Dispersion -6dB, 2KHz 110°
- Dispersion -6dB, 4KHz 58°
- IP Rating IP66
- Temperature range -25 / +70 C°
- Maximum cable cross section 8mm<sup>2</sup>
- Max. cable cross section loop 2x2mm<sup>2</sup>

TECHNICAL DATA

Dimensions (H x W x D)	Dimensions 137x 200mm
Weight	Weight (net) 1,44kg
Color	Colour RAL9016

SOUND PROJECTOR

SMX-EN-SP20W-130

Art no.: 37522



Sound projector, 20 W, 100 V,  
certified according EN 54-24, compliant BS 5839

PRODUCT INFORMATION

- impregnated 130 mm full-range speaker
- ceramic block and thermal fuse
- high-impact ABS-housing
- IP54 protection standard
- aluminium mounting-bracket
- 1 m, five-pin cable
- RoHS-compliant
- Rated voice/noise power 100 V (Watt): 20/10/5/2,5
- Frequency range (Hz): 150 - 20.000
- Frequency response IEC268-5 (-10dB)(Hz): 120 - 21.000
- SPL IEC268-5, 1 W/1 m (dB): 99,5
- SPL IEC268-5, 1 W/4 m (dB): 87,5
- SPL IEC268-5, Pmax./4 m (dB): 100,5
- SPL IEC268-5, Pmax./4 m (dB): 100,5
- Dispersion angle -6 dB, 500 Hz: 360°
- Dispersion angle -6 dB, 1 kHz: 230°
- Dispersion angle -6 dB, 2 kHz: 110°
- Dispersion angle -6 dB, 4 kHz: 58°

TECHNICAL DATA

Dimensions (H x W x D)	Dimensions (mm): Ø 145x222mm
Weight	Weight (kg): 1,44
Color	Colour: white

## SOUND PROJECTOR, BIDIRECTIONAL

SMX-EN-SP10W-130-BD

Art no.: 37523



Sound projector, bidirectional, 10 W, 100 V  
certified according EN 54-24, compliant BS 5839

## PRODUCT INFORMATION

- two 130mm full-range loudspeakers
- transformer with 3 power adjustments
- ABS plastic housing in RAL 9016
- aluminium mounting bracket
- ceramic block and a thermal fuse
- junction box
- Power 10/5/2,5 W
- Frequency Range 100 - 20.000 Hz
- Frequency Response 90 - 25.000 Hz
- SPL IEC268-5, 1W/1m 85,0 dB
- SPL EN54-24, Pmax/4m 82,5 dB
- Sensitivity EN54-24, 1W/4m 73,0 dB
- Sensitivity EN54-24, 1W/1m 85,6 dB
- Dispersion -6dB, 500Hz h / v 2x130° / 2x130°
- Dispersion -6dB, 1KHz h / v 2x170° / 2x170°
- Dispersion -6dB, 2KHz h / v 2x160° / 2x160°
- Dispersion -6dB, 4KHz h / v 2x65° / 2x65°
- IP Rating IP56
- Temperature range -25 / +70 C°

## TECHNICAL DATA

Dimensions (H x W x D)	Dimensions 202 x 163 x 170 mm
Weight	Weight (net) 1,82kg
Color	Colour RAL 9016

## SPHERE SPEAKER

SMX-EN-K16W-130

Art no.: 37524



Sphere Speaker, 16 W, 100 V,  
certified according EN 54-24, compliant BS 5839

## PRODUCT INFORMATION

- waterproofed 130 mm full range speaker chassis
- ceramic block and thermal fuse
- UV-resistant
- impact-proof ABS-housing (UL94 HB)
- Connection via cable clamp
- RoHS-compliant
- Rated voice/noise power 100 V (Watt): 16/8/4
- Frequency range (Hz): 130 - 13.300
- Frequency response IEC268-5(-10dB)(Hz): 130 - 23.500
- SPL IEC268-5, 1 W/1 m (dB): 89,9
- SPL IEC268-5, 1 W/4 m (dB): 77,9
- SPL IEC268-5, Pmax./4 m (dB): 89,9
- Sensitivity EN54-24, 1 W/4 m (dB): 73,0
- Dispersion angle-6 dB, 500 Hz: 360°
- Dispersion angle-6 dB, 1 kHz: 196°
- Dispersion angle-6 dB, 2 kHz: 132°
- Dispersion angle-6 dB, 4 kHz: 171°

## TECHNICAL DATA

Dimensions (H x W x D)	Dimensions (mm): Ø 239,5 x 141
Weight	Weight (kg): 1,50
Color	Colour: RAL 9010



Hemi-Sphere Speaker, 20 W, 100 V,  
certified according EN 54-24, compliant BS 5839

PRODUCT INFORMATION

- 100mm 2-way bass reflex system
- 100V transformer with 4 power adjustments
- adjusted by a rotary switch on the top of the sphere
- impact-resistant, UV-resistant ABS plastic housing in RAL 9016
- ceramic terminal block and thermal fuse
- PG screw connection
- protection class IP65
- Power 20 / 10 / 5 / 2.5 (8)W
- Frequency Range 80 -20.000 Hz
- Frequency Response 70 - 22.000 Hz
- SPL IEC268-5 , 1W/1m 92,0 dB
- SPL EN54-24, Pmax/4m 84,1 dB
- Sensitivity EN54-24, 1W/4m 71,9 dB
- Dispersion -6dB, 500Hz h/v 360° / 360°
- Dispersion -6dB, 1KHz h/v 160° / 160°
- Dispersion -6dB, 2KHz h/v 102° / 102°
- Dispersion -6dB, 4KHz h/v 86° / 86°
- IP Rating IP65
- Temperature range -10 / +55 C°
- Maximum cable cross section 8mm<sup>2</sup>
- Max. cable cross section loop 2x2mm<sup>2</sup>

TECHNICAL DATA

Dimensions (H x W x D)	Dimensions 189,4x231 mm
Weight	Weight (net) 2,02 kg
Color	Colour RAL 9016

## 2-WAY COAXIAL HORN SPEAKER

SMX-EN-PS150W-8"-2W-WHITE

Art no.: 37526



2-way coaxial horn speaker, 150 W, 100 V,  
certified according EN 54-24, white

## PRODUCT INFORMATION

- 2-way bass-reflex system
- 8" woofer
- High-performance HF-driver
- crossover at 2.5kHz
- 3 different 100V power tapplings
- sturdy high-impact ABS housing in white
- metal hexagon-shaped aluminium grille
- IP66
- screw-terminal at the rear
- cover plate with 2 x PG11 cable glands
- safety rope is included
- Power 150/75/38W (8ohm)
- Frequency Range 90 - 19.000 Hz
- Frequency Response 75 - 20.000 Hz
- SPL IEC268-5, 1W/1m 98,0 dB
- SPL EN54-24, Pmax/4m 102,5 dB
- Sensitivity EN54-24, 1W/4m 84,7 dB
- Dispersion -6dB, 500Hz 170° (h) 180° (v)
- Dispersion -6dB, 1KHz 79° (h) 80° (v)
- Dispersion -6dB, 2KHz 50° (h) 62° (v)
- Dispersion -6dB, 4KHz 85° (h) 70° (v)
- Temperature range -25 / +70 °C
- Maximum cable cross section 4,9mm<sup>2</sup>
- Max. cable cross section loop 2x1,2mm<sup>2</sup>

## TECHNICAL DATA

Dimensions (H x W x D)	Dimensions 315x305x350 mm
Weight	Weight (net) 11,85 kg
Color	Colour white



2-way coaxial horn speaker, 150 W, 100 V, certified according EN 54-24, black

PRODUCT INFORMATION

- 2-way bass-reflex system
- 8" woofer
- high-performance HF-driver
- crossover at 2.5kHz
- 3 different 100V power tapplings
- sturdy high-impact ABS housing in black
- metal hexagon-shaped aluminium grille
- IP66
- screw-terminal at the rear
- cover plate with 2 x PG11 cable glands
- metal mounting bracket
- safety rope is included
- Power 150/75/38W (8ohm)
- Frequency Range 90 - 19.000 Hz
- Frequency Response 75 - 20.000 Hz
- SPL IEC268-5, 1W/1m 98,0 dB
- SPL EN54-24, Pmax/4m 102,5 dB
- Sensitivity EN54-24, 1W/4m 84,7 dB
- Dispersion -6dB, 500Hz 170° (h) 180° (v)
- Dispersion -6dB, 1KHz 79° (h) 80° (v)
- Dispersion -6dB, 2KHz 50° (h) 62° (v)
- Dispersion -6dB, 4KHz 85° (h) 70° (v)
- Temperature range -25 / +70 °C
- Maximum cable cross section 4,9mm<sup>2</sup>
- Max. cable cross section loop 2x1,2mm<sup>2</sup>

TECHNICAL DATA

Dimensions (H x W x D)	Dimensions 315x305x350 mm
Weight	Weight (net) 11,85 kg
Color	Colour black

## 2-WAY COAXIAL HORN SPEAKER

SMX-EN-PS250W-12"-2W-WHITE

Art no.: 37528



2-way coaxial horn speaker, 250 W, 100 V,  
certified according EN 54-24, white

## PRODUCT INFORMATION

- for outdoor applications
- for foreground music and EN54 certification
- 2-way bass-reflex system
- 12" woofer
- high-performance HF-driver
- crossover at 2.5kHz
- 3 different 100V power tapings
- high-impact ABS housing in white
- metal hexagon-shaped aluminium grille
- IP66
- screw-terminal at the rear of the speaker
- cover plate with 2 x PG11 cable gland
- metal mounting bracket with adjustable inclination
- safety rope is included
- Power 250/125/63W (8ohm)
- Frequency Range 85 - 19.000 Hz
- Frequency Response 75 - 20.000 Hz
- SPL IEC268-5, 1W/1m 99,6 dB
- SPL EN54-24, Pmax/4m 110,5 dB
- Sensitivity EN54-24, 1W/4m 86,5 dB
- Dispersion -6dB, 500Hz 138° (h) 152° (v)
- Dispersion -6dB, 1KHz 60° (h) 70° (v)
- Dispersion -6dB, 2KHz 90° (h) 110° (v)
- Dispersion -6dB, 4KHz 80° (h) 70° (v)
- Temperature range -25 / +70 °C

## TECHNICAL DATA

Dimensions (H x W x D)	Dimensions 390x425x418 mm
Weight	Weight (net) 18,9 kg
Color	Colour white

2-WAY COAXIAL HORN SPEAKER SMX-EN-PS250W-12"-2W-BLACK

**Art no.: 37529**



2-way coaxial horn speaker, 250 W, 100 V, certified according EN 54-24, black

PRODUCT INFORMATION

- for outdoor applications
- for foreground music and EN54 certification
- 2-way bass-reflex system
- 12" woofer
- high-performance HF-driver
- crossover at 2.5kHz
- 3 different 100V power tapings
- high-impact ABS housing in black
- metal hexagon-shaped aluminium grille
- IP66
- screw-terminal at the rear of the speaker
- cover plate with 2 x PG11 cable glands
- metal mounting bracket with adjustable inclination
- safety rope is included
- Power 250/125/63W (8ohm)
- Frequency Range 85 - 19.000 Hz
- Frequency Response 75 - 20.000 Hz
- SPL IEC268-5 , 1W/1m 99,6 dB
- SPL EN54-24, Pmax/4m 110,5 dB
- Sensitivity EN54-24, 1W/4m 86,5 dB
- Dispersion -6dB, 500Hz 138° (h) 152° (v)
- Dispersion -6dB, 1KHz 60° (h) 70° (v)
- Dispersion -6dB, 2KHz 90° (h) 110° (v)
- Dispersion -6dB, 4KHz 80° (h) 70° (v)
- Temperature range -25 / +70 °C

TECHNICAL DATA

Dimensions (H x W x D)	Dimensions 390x425x418 mm
Weight	Weight (net) 18,9 kg
Color	Colour black

## MONITOR SPEAKER

SMX-EN-M30W-130-2W-WHITE

Art no.: 37530



Monitor speaker, 30 watt, 100 volt,  
certified according to EN 54-24, white

## PRODUCT INFORMATION

- 2-way speaker system
- thermal fuse
- Housing made of high-density ABS plastic
- weather resistant
- protection class IP 33C
- swivel bracket
- 6-pin screw terminal with touch protection
- RoHS compliant
- Rated voice/noise power 100 V (Watt): 30/15/7,5/2,5
- Dimensions (mm): Ø 260x160x152
- Frequency range (Hz): 86 - 23.500
- Frequency response IEC268-5 (-10dB)(Hz): 50 - 23.500
- SPL IEC268-5, 1 W/1 m (dB): 90,9
- SPL IEC268-5, 1 W/4 m (dB): 78,9
- SPL IEC268-5, Pmax./4 m (dB): 93,6
- Sensitivity EN54-24, 1 W/4 m (dB): 73,0
- Dispersion angle-6 dB, 500 Hz: h=360° v=360°
- Dispersion angle-6 dB, 1 kHz: h=203° v=153°
- Dispersion angle-6 dB, 2 kHz: h=101° v=133°
- Dispersion angle-6 dB, 4 kHz: h=288° v=196°

## TECHNICAL DATA

Dimensions (H x W x D)	Dimensions (mm): Ø 260x160x152
Weight	Weight (kg): 2,50
Color	Colour: white



Monitor speaker, 30 watt, 100 volt,  
certified according to EN 54-24, black8

### PRODUCT INFORMATION

- 2-way speaker system
- thermal fuse
- high-density ABS plastic
- weather resistant
- protection class IP 33C
- swivel bracket
- 6-pin screw terminal with touch protection
- RoHS compliant
- Rated voice/noise power 100 V (Watt): 30/15/7,5/2,5
- Dimensions (mm): Ø 260x160x152
- Frequency range (Hz): 86 - 23.500
- Frequency response IEC268-5 (-10dB)(Hz): 50 - 23.500
- SPL IEC268-5, 1 W/1 m (dB): 90,9
- SPL IEC268-5, 1 W/4 m (dB): 78,9
- SPL IEC268-5, Pmax./4 m (dB): 93,6
- Sensitivity EN54-24, 1 W/4 m (dB): 73,0
- Dispersion angle-6 dB, 500 Hz: h=360° v=360°
- Dispersion angle-6 dB, 2 kHz: h=101° v=133°
- Dispersion angle-6 dB, 4 kHz: h=288° v=196°

### TECHNICAL DATA

Dimensions (H x W x D)	Dimensions (mm): Ø 260x160x152
Weight	Weight (kg): 2,50
Color	Colour: black

## MONITOR SPEAKER

SMX-EN-M50W-165-2W-WHITE

Art no.: 37532



Monitor speaker, 50 watt, 100 volt,  
certified according to EN 54-24, white

## PRODUCT INFORMATION

- 2-way speaker system
- thermal fuse
- high-density ABS plastic
- weather resistant
- protection class IP 33C
- swivel bracket
- 6-pin screw terminal with touch protection
- RoHS compliant
- Rated voice/noise power 100 V (Watt): 50/25/12,5/6,25
- Frequency range (Hz): 63 - 20.100
- Frequency response IEC268-5 (-10dB)(Hz): 53 - 20.300
- SPL IEC268-5, 1 W/1 m (dB): 88,2
- SPL IEC268-5, 1 W/4 m (dB): 76,2
- SPL IEC268-5, Pmax./4 m (dB): 93,1
- Sensitivity EN54-24, 1 W/4 m (dB): 76,7
- Dispersion angle-6 dB, 500 Hz: h=194° v=185°
- Dispersion angle-6 dB, 1 kHz: h=152° v=114°
- Dispersion angle-6 dB, 2 kHz: h=97° v=103°
- Dispersion angle-6 dB, 4 kHz: h=64° v=43°

## TECHNICAL DATA

Dimensions (H x W x D)	Dimensions (mm): Ø 326x202x192
Weight	Weight (kg): 3,65
Color	Colour: white



Monitor speaker, 50 watt, 100 volt,  
certified according to EN 54-24, black

#### PRODUCT INFORMATION

- 2-way speaker system
- thermal fuse
- high-density ABS plastic
- weather resistant
- protection class IP 33C
- swivel bracket
- 6-pin screw terminal with touch protection
- RoHS compliant
- Rated voice/noise power 100 V (Watt): 50/25/12,5/6,25
- Frequency range (Hz): 63 - 20.100
- Frequency response IEC268-5 (-10dB)(Hz): 53 - 20.300
- SPL IEC268-5, 1 W/1 m (dB): 88,2
- SPL IEC268-5, 1 W/4 m (dB): 76,2
- SPL IEC268-5, Pmax./4 m (dB): 93,1
- Sensitivity EN54-24, 1 W/4 m (dB): 76,7
- Dispersion angle-6 dB, 500 Hz: h=194° v=185°
- Dispersion angle-6 dB, 1 kHz: h=152° v=114°
- Dispersion angle-6 dB, 2 kHz: h=97° v=103°
- Dispersion angle-6 dB, 4 kHz: h=64° v=43°

#### TECHNICAL DATA

Dimensions (H x W x D)	Dimensions (mm): Ø 326x202x192
Weight	Weight (kg): 3,65
Color	Colour: black

## SOUND COLUMN

SMX-EN-SZ20W-500

Art no.: 37534



Sound Column, 20 W, 100 V,  
certified according EN 54-24, compliant BS 5839

## PRODUCT INFORMATION

- ceramic block and thermal fuse
- 4 full-range speakers
- Weather proof
- powder coated aluminium housing
- IP66 protection standard
- Ball proof according to DIN 18032, part 3
- swivel bracket
- RoHS-compliant
- Rated voice/noise power 100 V (Watt): 20/15/10/5
- Frequency range (Hz): 217-16.900
- Frequency response IEC268-5 (-10dB)(Hz): 147-23.500
- SPL IEC268-5, 1 W/1 m (dB): 100,3
- SPL IEC268-5, 1 W/4 m (dB): 88,3
- SPL IEC268-5, Pmax./4 m (dB): 101,3
- Sensitivity EN54-24, 1 W/4 m (dB): 80,5
- Dispersion angle-6 dB, 500 Hz: h=360° v=124°
- Dispersion angle-6 dB, 1 kHz: h=188° v=65°
- Dispersion angle-6 dB, 2 kHz: h=149° v=38°
- Dispersion angle-6 dB, 4 kHz: h=86° v=14°

## TECHNICAL DATA

Dimensions (H x W x D)	Dimensions (mm): 510x100x92
Weight	Weight (kg): 2,90
Color	Weight (kg): 2,90

**SOUND COLUMN** **SMX-EN-SZ50W-1000**  
**Art no.: 37535**



Sound Column, 50 W, 100 V,  
 certified according EN 54-24, compliant BS 5839

**PRODUCT INFORMATION**

- ceramic block and thermal fuse
- 8 full-range speakers
- Weather proof
- powder coated aluminium housing
- IP66 protection standard
- Ball proof according to DIN 18032, part 3
- swivel bracket
- RoHS-compliant
- Rated voice/noise power 100 V (Watt): 50/30/15/7,5
- Frequency range (Hz): 250-15.800
- Frequency response IEC268-5 (-10dB)(Hz): 110-18.000
- SPL IEC268-5, 1 W/1 m (dB): 102,8
- SPL IEC268-5, 1 W/4 m (dB): 90,8
- SPL IEC268-5, Pmax./4 m (dB): 107,7
- Sensitivity EN54-24, 1 W/4 m (dB): 82,7
- Dispersion angle-6 dB, 500 Hz: h=360° v=73°
- Dispersion angle-6 dB, 1 kHz: h=186° v=33°
- Dispersion angle-6 dB, 2 kHz: h=173° v=17°
- Dispersion angle-6 dB, 4 kHz: h=98° v=6°

**TECHNICAL DATA**

Dimensions (H x W x D)	Dimensions (mm): 971x100x92
Weight	Weight (kg): 5,20
Color	Colour: RAL 9006

**SPECIAL PAINTING IN RAL FOR SOUND PROJECTORS** **RAL-DA/-DA-S**  
**Art no.: 37900**

Special painting in RAL, -4 digit color scale (no pearl  
 and metallic effect), for sound projectors

**SPECIAL PAINTING IN RAL FOR CEILING SPEAKERS** **RAL-DL**  
**Art no.: 37901**

Special painting in RAL, -4 digit color scale (no pearl  
 and metallic effect), for ceiling speakers

**SPECIAL PAINTING IN RAL FOR CEILING SPEAKERS** **RAL-TS-C**  
**Art no.: 37902**

Special painting in RAL, -4 digit color scale (no pearl  
 and metallic effect), for sound lines

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SPECIAL PAINTING IN RAL FOR WALL SPEAKERS AND IN-WALL  
SPEAKERS

RAL-WA/-WU

**Art no.: 37903**

Special painting in RAL, -4 digit color scale (no pearl  
and metallic effect), for wall speakers and in-wall  
speakers

# T&Cs & RMA

## TERMS AND CONDITIONS



**General** terms and conditions.

## General terms of delivery

### Section 1 General – scope

1. Our terms of delivery apply exclusively; we do not accept conditions from the customer that are contrary to or different from our terms of delivery unless we have explicitly agreed in writing that they will be valid. Our terms of delivery apply even if we carry out delivery to the customer without reservation when we are aware that the customer has conditions which are contrary to or different from our terms of delivery.
2. All agreements that have been made between us and the customer for the purposes of executing this contract are set down in writing in this contract. Our employees are not authorised to make verbal commitments that go beyond the written contractual agreement.
3. Our terms of delivery only apply in relation to companies as per Section 14 German Civil Code [BGB], legal persons under public law and special funds under public law.
4. Our terms of delivery apply for all current and future business relationships with the customer.

### Section 2 Conclusion of the contract; confidentiality

1. Our offers are non-binding. We reserve the right to make minor technical changes and minor changes to shape, colour and/or weight within the customary scope.
2. If the order is classified as an offer as per Section 145 German Civil Code, we can accept it within two weeks of receiving the order.
3. Unless stipulated otherwise in these terms of delivery or in our order confirmation, the INCOTERMS apply in the version as amended at the time of concluding the contract.
4. We reserve the right to correct and prompt self-delivery, provided that the self-delivery is a hedging transaction congruent to the contract between us and the customer. We will inform the customer immediately if the service is not available and immediately reimburse the customer with the appropriate consideration.
5. We retain ownership rights and copyrights to diagrams, drawings, calculations and other documents. This also applies for written documents marked as "confidential". The customer must obtain our explicit written consent before passing them on to third parties.
6. Furthermore, the customer is obliged to maintain confidentiality in relation to information received from us as part of the business relationship, irrespective of the format of the information. The customer must not use this information for purposes other than the contractually agreed purposes and must not make it accessible to third parties without our prior consent. If we agree to information being passed to a third party, the customer must oblige the third party to maintain confidentiality in the same way.
7. The customer is obliged to comply with the respective valid data protection regulations.

### Section 3 Prices – terms of payment

1. Unless stated otherwise in the order confirmation, our prices apply "ex works" and do not include packaging; this will be invoiced separately.
2. We reserve the right to change our prices accordingly if, after the conclusion of the contract, there are price increases, in particular due to wage agreements or changes in the price of materials, and these result in a cost increase in

relation to the product as a whole. We will provide the customer with evidence of cost increases on request.

3. If it is intended that the delivery will take place four months or more after the conclusion of the contract based on an agreement between us and the customer or if it can only take place at this delayed time due to circumstances for which the customer is solely responsible, we are entitled to charge the price taken from our price lists on the day of delivery instead of the agreed price.
4. Our prices do not include statutory value-added tax; this will be stated separately in the invoice at the legal level on the date of invoicing.
5. Unless stated otherwise in the order confirmation, the customer commits to pay the purchase price net (without deduction) within ten days of receiving the invoice. After the end of this period, the customer will go into payment default. The statutory regulations concerning the consequences of payment default shall apply.
6. The customer only has rights of set-off if its counter-claims have been legally established, are undisputed or have been accepted by us. This restriction does not apply to claims from the customer based on defects in relation to the same contractual relationship as our payment request. In addition, the customer is only entitled to exercise a right of retention if its counter-claim is based on the same contractual relationship.

### Section 4 Delivery time – default of acceptance – delayed delivery

1. Compliance with deadlines for deliveries shall require the prompt receipt of all documents, necessary permits and approvals to be provided by the customer, particularly plans, and compliance with the agreed terms of payment and other obligations by the customer. If these requirements are not met in good time, the deadlines shall be extended until all of these obligations are met; this does not apply if we are responsible for the delay.
2. Compliance with our delivery commitment shall also require the prompt and proper fulfilment of the customer's obligation. The defence of unperformed contract (Section 320 German Civil Code) and the defence of insecurity (Section 321 German Civil Code) are reserved.
3. Partial deliveries are permitted if this is reasonable for the customer.
4. If, at the request of the customer, shipping or delivery are delayed by more than one month after notification of readiness for dispatch, we may charge storage charges amounting to 0.5% of the contract price of the objects in the deliveries for each commenced month, however no more than a total of 5%. The parties are at liberty to provide evidence of higher or lower storage costs.
5. If the customer goes into default of acceptance or culpably infringes other duties of cooperation, we shall be entitled to demand compensation for the damages we suffer as a result of this, including any additional expenses. We reserve the right to make further claims.
6. If the requirements of point 5 are present, the risk of accidental destruction or accidental deterioration of the purchased item shall transfer to the customer at the time when the customer goes into default of acceptance or default on debt obligations.
7. All force majeure incidents (e.g. mobilisation, war, riot, strike, lawful lock-out or similar incidents) for which we are not responsible and which obstruct us from fulfilling our contractual obligations shall entitle us to postpone delivery dates by the duration of the obstruction. We will inform the customer of the occurrence of the obstruction and the expected duration as soon as we are

aware of the situation. If any such incident lasts longer than three months, we may withdraw from the contract. If we go into delayed delivery, we shall be liable according to the statutory provisions, provided that the underlying purchase contract is a transaction to be settled on a fixed date as per Section 286(2)(4) German Civil Code or Section 376 German Commercial Code [HGB]. We shall also be liable according to the statutory provisions if, as a result of a delayed delivery for which we are responsible, the customer is entitled to claim that its interest in the further performance of the contract has ceased.

8. In the event of delayed delivery, we shall be liable for compensation in addition to performance (damages due to delay) for every completed week of delay within the framework of a flat-rate compensation for delayed completion amounting to 0.5% of the contract price of the goods delivered too late, however a maximum of 5% of the contract price. In the event of delayed delivery, we shall be liable for compensation instead of performance up to a maximum amount of 25% of the contract price of the goods delivered too late.
9. In the event of delayed delivery, we shall be liable for compensation in addition to performance (damages due to delay) for every completed week of delay within the framework of a flat-rate compensation for delayed completion amounting to 0.5% of the contract price of the goods delivered too late, however a maximum of 5% of the contract price. In the event of delayed delivery, we shall be liable for compensation instead of performance up to a maximum amount of 25% of the contract price of the goods delivered too late.

### Section 5 Withdrawal

1. The customer may withdraw from the contract within the framework of the legal requirements if we are responsible for the breach of obligation; in the case of defects (Section 7), the statutory requirements shall be retained.
2. In the event of breaches of duty, after being asked by us, the customer must declare within a reasonable period whether it wishes to withdraw from the contract due to breach of duty or whether it insists that the delivery is made.

### Section 6 Transfer of risk

1. Unless stated otherwise in the order confirmation, delivery "ex works" is agreed.
2. In the event of sale by delivery, we are entitled to send the goods to be delivered from a location other than the place of performance. If the customer wishes, we will ensure that the delivery is covered by transport insurance; the customer shall bear any costs incurred in relation to this.

### Section 7 Liability for defects

1. There shall be no claims for defects in the event of damage that occurs after the transfer of risk as a result of incorrect or negligent handling, excessive strain, unsuitable resources, defective construction work or due to particular external influences that are not stipulated in the contract. If the customer or a third party carries out improper alterations or maintenance work, there shall also be no claims for defects for this and the resulting consequences.
2. The customer's rights arising from product defects require the customer to have met its duties of inspection and objection in the proper manner as per section 377 German Commercial Code. Notifications of defects must be submitted in writing. The customer shall bear the full burden of proof for all claim requirements, in particular for the defect itself, for the time of the defect and for the notification of the defect being made in good time.

3. In the event of notifications of defects, the customer may only withhold payments in an amount that is reasonable in proportion to the defects that have occurred. The customer may not refuse to accept deliveries due to minor defects.
4. If the purchased item has a defect, at our discretion we shall be entitled to provide subsequent performance in the form of rectification of defects or to supply a new, defect-free item.
5. If we do not meet our obligation to remedy defects, if the subsequent performance fails or is unreasonable, then at its discretion the customer is entitled to withdraw or demand a discount. However, the purchaser shall not have any right of withdrawal in the event of only an insignificant breach of duty, in particular minor defects. Our liability towards the customer for compensation shall be based on Section 8 (Total liability) of these General terms of delivery.
6. The limitation period for claims arising from defects is twelve months. This does not affect the cases of Section 438(1)(2) and Section 634a(1)(2) German Civil Code. Our legal liability as per Section 8 points 1 and 3 of these General terms of delivery and in the event of fraudulent concealment of a defect is not affected.
7. The limitation period for recovery from the supplier as per Sections 478, 479 German Civil Code remains unaffected; it is five years calculated from the delivery of the defective item. Rights of recourse against us as per Section 478 German Civil Code (recourse of the entrepreneur) only exist to the extent that the customer has not made any agreement that goes beyond the legal claims for defects with its buyer.

### Section 8 Total liability

1. If the customer makes claims for compensation due to intent or gross negligence, including due to the intent or gross negligence of our representatives or agents, we shall be liable according to the legal requirements. If we cannot be accused of an intentional breach of contract, the liability for compensation is limited to the foreseeable damages that typically occur.
2. We shall also be liable according to the legal requirements if we culpably infringe a key contractual obligation (key contractual obligations are those that must be performed in order to achieve the purpose of the contract and which the purchaser trusted and was entitled to trust would be performed); in this case, however, the liability for compensation – except for intentional breaches of duty – is also limited to the foreseeable damages that typically occur.
3. The liability due to culpable injury to life, limb or health remains unaffected; this also applies for the mandatory liability according to the German Product Liability Act [Produkthaftungsgesetz].
4. Any further liability for compensation other than that mentioned above is excluded without consideration of the legal nature of the claim made. This applies in particular to claims for compensation due to fault on conclusion of the contract, due to other breaches of duty or due to unlawful claims for compensation of property damage as per Section 823 German Civil Code.
5. The limitation as per point 4 applies even if the customer requests compensation of unnecessary expenses instead of a claim for compensation of damage.
6. If the liability for compensation towards us is excluded or restricted, this also applies in relation to the personal claims for liability of our employees, workers, colleagues, representatives and agents.

**Section 9 Use of software and firmware – industrial property rights**

1. The customer has a non-exclusive right of use to standard software and firmware with the agreed performance features in unaltered form on the agreed devices. The customer may produce a backup copy of the standard software without this requiring an explicit agreement.
2. The goods that we supply are subject to industrial property rights (e.g. patents, trade marks and copyrights). The customer commits to observe our industrial property rights and those of third parties when operating or using the goods.

**Section 10 Safeguarding reservation of title**

1. We retain ownership of the purchased item until all payments resulting from the business relationship with the customer are received. If the customer has an account with us, the reservation of title shall also relate to the balance recognised in this account; the same applies if there is no recognised balance and instead there is a "causal" balance, for example because the customer has become insolvent or has gone into liquidation.
2. If the purchaser does not meet its contractual obligations, we shall be entitled to withdraw from the contract and to demand goods subject to reservation of title when the legal requirements are present. The customer is obliged to handle the purchased item with care; in particular, it is obliged to ensure that there is sufficient insurance cover against fire damage, water damage and theft for the replacement value of the item. If maintenance and inspection work are required, the customer must conduct this in good time at its own expense.
3. In the event of seizure or other interventions of third parties, the customer must inform us immediately in writing so that we can make a claim as per Section 771 German Code of Civil Procedure [ZPO]. If the third party is not in the position to reimburse us for the court and out-of-court costs of an action as per Section 771 German Code of Civil Procedure, the customer shall be liable for the loss that we suffer as a result of this.
4. The customer is entitled to sell the purchased item on during the ordinary course of business; however, it must now transfer to us all payment requests, which it accrues against its buyer or third parties as a result of the resale, in the amount of the final invoice amount (including VAT) of our payment request; this applies irrespective of whether the purchased item is resold without or after further processing. The customer remains authorised to collect this payment request even after the assignment. This does not affect our authority to collect the payment request ourselves. However, we commit to not collecting the payment request if the customer meets its payment obligations resulting from the collected proceeds, does not go into payment default and in particular no application is made for the opening of insolvency proceedings and there is no suspension of payments. If this is the case, we may demand that the customer discloses the assigned payment requests and their debtors to us, provides all information necessary for collection, releases the corresponding documents and informs the debtors (third parties) of the assignment.
5. The processing or alteration of the purchased item by the customer is always carried out for us. If the purchased item is processed using other objects not belonging to us, then we acquire joint ownership of the new item in proportion to the value of the purchased item (final invoice amount, including VAT) in comparison with the other processed objects at the time of processing. Other than this, the same applies for the item created through processing as for the purchased item supplied subject to reservation of title.

6. If the purchased item is inextricably mixed with other objects not belonging to us, then we acquire joint ownership of the new item in proportion to the value of the purchased item (final invoice amount, including VAT) in comparison with the other mixed objects at the time of mixing. If the mixing is carried out in such a way that the customer's item should be seen as the main item, it is agreed that the customer shall transfer proportionate joint ownership to us. The customer shall preserve the resulting sole ownership or joint ownership for us.
7. The customer shall also assign to us the payment requests to safeguard our payment requests against the customer, which arise against a third party due to connecting the purchased item to a property.
8. If the reservation of title or the assignment is not effective according to the law in the area in which the item is located, then the safeguarding corresponding to reservation of title or assignment in this area is deemed to be agreed. If the customer's cooperation is required for this to emerge, then at our request the customer is obliged to take all measures, at its expense, necessary to justify and maintain any such rights.
9. We commit to releasing the securities to which we are entitled at the customer's request to the extent that the realisable value of our securities exceeds the secured payment requests by more than 10%; it is our responsibility to select the securities to be released.

**Section 11 Benefits – assistance**

1. If we, in addition to supplying the delivery items, provide the customer with support and/or assistance during the installation/commissioning of delivery items, then the limitations of liability from Sections 7 and 8 shall apply accordingly.
2. The customer shall be solely responsible for the correct design, dimensioning and positioning of the purchased item for the customer's purposes. Except where there is a written agreement to the contrary, we do not take on any related consultancy obligations. The provision of general information is not a consultancy service on our part in relation to the requirements mentioned in sentence 1 and does not release the customer from its responsibility.

**Section 12 Jurisdiction – place of performance – applicable law**

1. Our registered office is the sole place of jurisdiction if the customer is a merchant, legal person under public law or a special fund under public law; however, we are also entitled to take legal action against the customer at its registered office.
2. If the customer is a merchant, legal person under public law or a special fund under public law and the order confirmation does not state anything to the contrary, our registered office is the place of performance.
3. The law of the Federal Republic of Germany applies; the validity of the UN Convention on Contracts for the International Sale of Goods is excluded.

Available on our website: [www.detectomat.com](http://www.detectomat.com)  
Ahrensburg, Germany, 06.10.2022

### **RMA (Return Material Authorization) conditions**

1. The General terms and conditions of Detectomat Systems GmbH apply for the processing of deliveries with RMA material processing.
2. Returns of ordered and unused materials shall only be accepted in the unopened original packaging within two months of the delivery date. A re-storage fee of 20% of the goods value according to the invoice issued, however a maximum of EUR 300 per Part No., will be charged for these goods. This also applies to incorrect deliveries that were not the fault of Detectomat Systems GmbH.
3. In order to ensure correct and prompt processing, we need the following information with the return:
  - RMA number, which will be assigned to the respective intended return by Detectomat Systems GmbH (the RMA number must be requested from Detectomat Systems GmbH in advance)
  - Serial number of the product and evidence of the purchase date from the invoice or delivery note
  - Version of the software with which the product is equipped, detailed clear error description
  - The respective transaction will only be processed by Detectomat Systems GmbH and, if necessary, a replacement delivery will only be arranged if the data mentioned above is provided in full.
4. Spare parts can be provided from our exchange stock, including advance replacements. These parts may be repaired products, but they will be in as-new condition and will have been tested. If no adequate spare part can be delivered, a proposal will be issued for an appropriate replacement of the system part.
5. The spare part material value will be charged when the advance replacement is issued. Once the return and testing / repair have been carried out, a credit note will be issued for the material value and, if necessary, a charge will be made for the actual costs for repair, handling and storage of the goods in the exchange stock of Detectomat Systems GmbH (buyback). The materials must be returned promptly, however within three weeks, for the process to be carried out. Otherwise the replacement goods will be deemed to be an accepted suggested solution and the invoice will be due for payment immediately.
6. The repair costs will be charged on a time-and-materials basis.
7. Only materials that are not more than three years old will be accepted for repair / returns for advance replacement. Evidence of this must be provided by giving notification of the serial number or the invoice / delivery note number.
8. It is not possible to provide a functional guarantee for the system due to consequential loss caused by the original error and the partial replacement of system parts. In any case, it is recommended that the system be tested for complete and proper function after modules have been replaced.
9. If the incoming inspection by Detectomat Systems GmbH identifies that a repair / maintenance of the module or the construction element will not be economical, then an offer will be issued for a replacement / exchange delivery.

**Subject to changes, Ahrensburg, Germany, 06.10.2022**



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Subject to technical changes.

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Part No. 54524 | Last revised October 2022