

Acoustics | Clocks | Evacuation



APS[®]-APROSYS

Modular system solutions



Swiss Made

Often invisible. But always loud and clear. These have been the innovative ideas of g+m elektronik ag for over 50 years. With our electroacoustic developments we continue to set new standards in the markets. Far beyond the borders of Europe.

Our brand name stands for Swiss values and for Swiss quality. Lasting and forward-looking. We develop, design and produce trend-setting solutions which have made us what we are with the solid expertise so typical of our company: they have made us a market leader.

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Uncompromising and advanced

APS® TECHNOLOGY CONNECTS

With this APS® generation we have developed a smart system solution for you, a system that is typically what we produce at g+m elektronik ag: Swiss precision, completely user-friendly and future-proof. Thanks to features such as LAN networking and DSP technology, our APS® technology meets your most demanding requirements. Made in our own plant, this brand sets global standards.

Simple ease of use

In the APS® technology we have consistently implemented our principle of "the more complex the system demands, the more user-friendly our solutions". Even large overall systems can be easily operated using the APS® technology. You enjoy the highest degree of user convenience with your system solution that can be individually configured from over 100 modules.

Open system architecture

The open and modular overall system for public address systems (PA), media technology as well as electroacoustic emergency warning systems (EWS) and voice alarm control and indicating equipment (VACIE) has many different interfaces. It offers you maximum flexibility in case you would like to connect additional systems. With it you can easily integrate fire alarm systems, building management systems or controllers and monitoring of non-acoustic systems.

Secure interfaces

Smart also means that you can directly access the user interface as well as system feedback with guaranteed error detection during interface disruptions. The automatic and continuous monitoring of these interfaces guarantees the prescribed system availability even in emergencies:

- RS-232 interfaces to the report output
- LAN connections with software interfaces
- 100 V interfaces
- Telephone interfaces
- 0 dB interfaces
- Monitored, potential-free contacts

Clear advantages at a glance

- Free, modular system architecture
- Versatile operation
- Highest degree of system flexibility
- Cost-effective and efficient
- Logical and intuitive
- Optimum integration
- Expandability
- EN 54-16/EN 50849 certified

**Flexibility
for complex
challenges**

High-performance and multi-talented

The APS® technology is characterised by its versatility in every field of application. Whether in public areas or in the company, in outdoor spaces or inside a building – our system solution has demonstrated its reliability and flexibility wherever people come together.

Where is the APS®
technology used?

Schools & universities



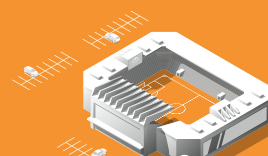
First Class Wherever people learn new things together, that is where "adaptive" electroacoustic systems from g+m elektronik ag are also in demand. They are flexible to use and can be integrated based on individual requirements and pass every test when it comes to on-site security.

Retirement home /Tertianum



Total vital Presentations and music worth listening to keep people young. Whether for therapy, events or information purposes – in facilities for the elderly, public address systems from g+m elektronik ag have demonstrated that they meet the acoustic needs of each age.

Sports & Multipurpose Facilities



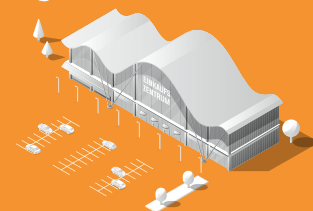
Winner Type When it comes to valuable points, decisive seconds or scoring a goal, acoustics always play a leading role in the big leagues. The acoustics can motivate athletes or fill the public with enthusiasm. Public address systems from g+m elektronik ag meet every sporting challenge.

Catering



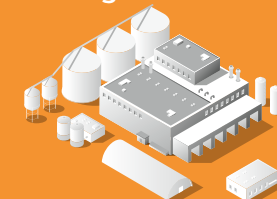
Inviting Discreet music can stimulate diners taste buds. Depending on the style of the establishment, young and contemporary or classy to elegant. With the appropriate background music, an electroacoustic system from g+m elektronik ag provides an inviting ambiance in any restaurant or hotel.

Shopping centre



Eventful Do your shopping in a relaxed atmosphere – it revitalises the shops and makes the tills ring more often. Public address systems from g+m elektronik ag play their role here with pleasant music and a soundtrack of advertising announcements. Integrated into the on-site security concept, they contribute to people's enjoyment of the shopping experience.

Office buildings



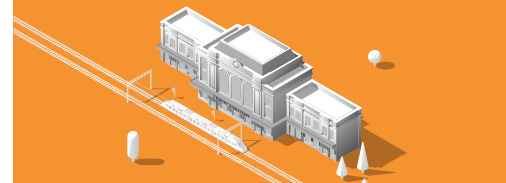
Company value Success has a good ring to it, especially in places where motivated top-level performance is provided. Whether in production facilities or in the office, public address systems from g+m elektronik ag can help save time, effort and costs with important information to ensure safety and increase enjoyment at work.

Hospital / Spital



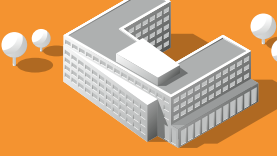
Healthy performance First aid is also a question of easily understandable information. Public address systems from g+m elektronik ag prove to be valuable wherever health has top priority, whether in the eye clinic or central A&E admissions. They convey safety and support the hospital team as they perform their everyday work.

Public transport



Moving Anyone wanting to take a bus or train is reliant on accurate information. Every minute counts in order to make the connection on time or to be on the right station platform. g+m elektronik ag wishes you a pleasant trip!

Public buildings



Open for everyone In a museum, a theatre, a multi-purpose hall or an official building – wherever many people come and go everyday, easily understandable information is in demand. Musical recordings also boost trust and comfort in public areas.

Churches



Heavenly A space for reflection, a space for taking time to pause, a space for celebration. Church interiors radiate a totally unique atmosphere. A public address system from g+m elektronik ag meets the highest requirements to cope with the sacred nature of events in every situation.

Specialities



Individual Each space has its own particular acoustics. Sometimes professional technology is needed to achieve commercial objectives or ensure public safety, and at other times there is a personal preference for the perfect sound experience. g+m elektronik ag always offers a custom solution.

APS-9000

THE NEXT GENERATION

The APS-9000 central platform from g+m elektronik ag represents a new dimension in APS technology. The APS-9000 is based on a forward-looking design and architecture.

Featuring a Linux Embedded PC, it is much more than an innovative control unit: like a mastermind, it networks your proven APS®-APROSYS system modules with new digital applications, making your voice alarm and audible system even more powerful and efficient. APS®-APROSYS is the smart system

solution from g+m elektronik ag: with its Swiss precision, user-friendliness and forward-looking concept, our APS® technology meets your most demanding requirements for voice alarm control and indicating equipment (VACIE), electroacoustic emergency warning system (EWS), public address systems and media technology.

**Forward-looking
architecture**



Improved audio quality

The APS-9000 provides even better audio quality and greater ease of use.

Tried-and-tested system modules plus new applications

Thanks to perfect backward compatibility, you can set up your existing APS® system solution with the APS-9000 and expand it further with new applications in the long term.

Compact design with the latest technology

The 19 most commonly used APS modules are digitally imaged in a compact design with only one height unit. The APS-9000 is individually programmable and also scalable for complex plant configurations.

Ready for the digital expansion

For processing digital audio signals, all DSP functions are already integrated into the inputs and outputs and can be operated via remote control.

Managed Ethernet switch for perfect data management

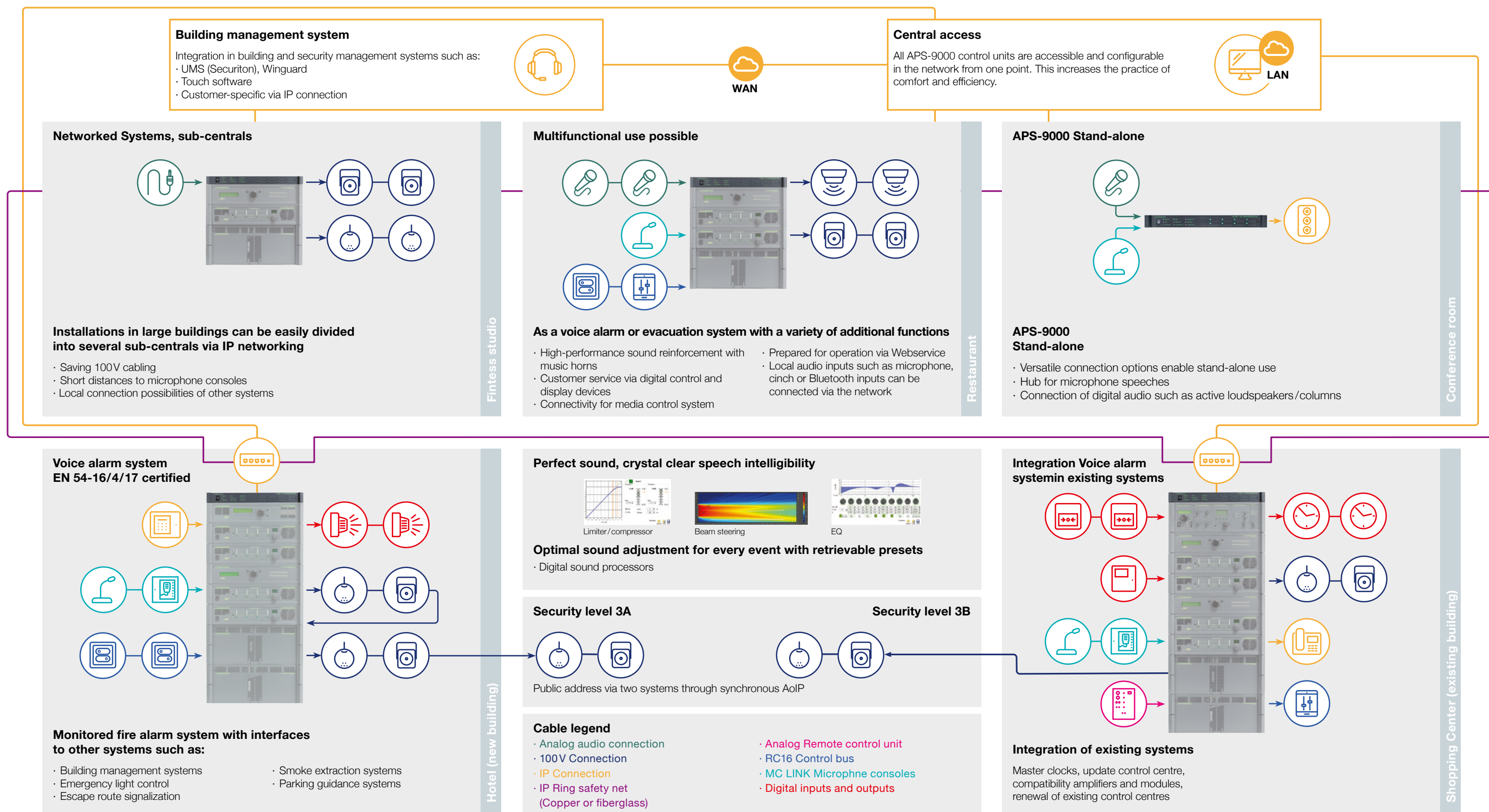
With the Ethernet switch, the APS-9000 becomes your control centre. The four integrated managed Ethernet ports are used to connect

the operating and display elements, configuration software, remote maintenance, fire alarm control panels, control centres and building automation systems.

The APS-9000's capabilities

- Integrated APS Engine
- Monitored according to standard EN 54-16
- 4-channel audio player
- 8 programmable buttons/LEDs
- DSP for all analogue and digital inputs/outputs
- 2 MC LINK inputs for serial call stations
- 4 analogue inputs -60 to 0 dBu
- 2 analogue outputs 0 dBu
- 8 digital monitored inputs
- 4 digital potential-free change-over contacts
- APS network functions (optional software package APS-9000-SW-NP1)
- Web server for operating and display elements (optional software package)
- Hardware firewall to separate fire protection (VACIE/EWS) and professional public address systems (PA)
- Various interfaces (optional software package) for connection to control centres and building management systems
- Digital AES67 audio matrix (optional software package APS-9000-SW-NP1)

COMPACT, COMPATIBLE, EXPANDABLE



Safety with system

Voice alarm systems compliant with the EN 54-16 standard

When it comes to the safety of people, quick and comprehensible information can save lives during emergencies. Acoustic voice alarm systems (VACIE) are used in such an emergency situation. These are sound amplification and sound distribution systems which are part of fire alarm systems and meet the respectively applicable national or international standards and regulations.

Top priority: comprehensibility

Acoustic voice alarms allow the quick notification and alerting of persons who are in the danger zone inside or outside a building. Previously recorded or situation-dependent texts ensure that accurate messages are transmitted. This can be done in several languages as well.

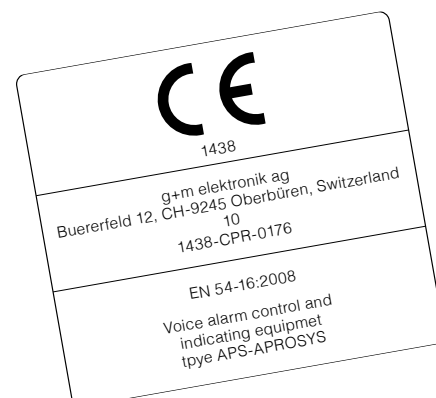
The topmost priority of the system is to transmit information smoothly and comprehensibly during an emergency. People in danger can then

identify the situation, take it seriously and then act accordingly. The spoken word has been demonstrated to be of great importance during emergencies. Panic can be avoided, people escape in a calmer and more orderly manner and evacuation speed is increased.

Information that arrives in a targeted manner

Acoustic voice alarm systems are used in places where higher safety requirements apply. This applies mostly to buildings and spaces where many people who are unfamiliar with on-site escape routes congregate. This includes shopping centres, hospitals, office buildings, homes for the elderly, factory halls, schools and universities, banks, sports facilities, hotel and conference buildings, administrative buildings and train stations.

In concrete terms this means that the system – from the microphone capsule, the input modules and amplifiers to all the speaker lines – is monitored independently. This also includes the digital memories of the audio signal sources for alarm texts. The peripherals also controlled in this manner consist of the main power supply, the emergency power supply as well as battery charging. If faults occur during monitoring, these are logged in the system at any time in a traceable manner.



Product standard EN 54-16

The acoustic voice alarm system is an important part of the entire safety concept. Therefore, the system must be available and fail-safe as stipulated by the EN 54-16 standard. Ongoing self-monitoring of the audio signal path and the essential peripherals allow the acoustic voice alarm system to identify safety-related faults within 100 seconds and display these to the system technician.

User standards VDE 833-4 NEN 2575 BS-5839 ...

The planning, installation and operation of acoustic voice alarm systems pursuant to EN 54-16 are defined in the country-specific standards.

As of April 1, 2011 only voice alarm systems that have an official EU certificate of conformity and bear an appropriate CE label may be used in Europe. These certificates may be issued only by specific European inspection authorities (www.ec.europa.eu).

CERTIFIED DEVICE MONITORING

✓ These applications are monitored in accordance with the EN 54-16 standard



✓ Fire department microphone
microphone capsule,
signal amplifier, supply line

✓ Central processing unit
processor control, mains voltage,
emergency power supply, fault logging



✓ Evacuation console
microphone capsule, signal amplifier,
analogue and digital supply line

✓ Digital text device
voice memory, signal amplifier,
actuation



✓ Fire alarm interface

✓ Alarm signal generator
generator, signal amplifier,
control



✓ Loudspeaker EN 54-24
speaker impedance, short-circuit
and ground connection

✓ Amplifiers
output signal, excess temperature,
mains and battery voltage

✓ Emergency power supply
battery capacity, mains voltage and
charging current

Well-designed

It's this simple to use the APS® technology

Simple and clear

Emphasis placed on practice: even complex systems can be operated almost intuitively. As a user you can control and monitor the APS® technology centrally by computer or through a building's master control system. You select functions such as announcements or alarm signals directly on a display screen. Error messages are logged with specific details and even time-stamped central announcements can be automatically archived thanks to the open system.

Easy fault correction

System analysis and remote maintenance with innovative tools

Our convenient APS® software tools make the monitoring and remote maintenance of your system very easy. You can quickly and efficiently analyse all functions of the overall system from a remote computer. Possible errors or changes are immediately located and rectified using practical diagnostic tools, this minimising critical downtimes and reducing maintenance costs.

Powerful programming software

Our new programming software also promises maximum efficiency: the perfect base for efficient programming of the entire APS® system. You need to make changes later on? On-site or remote options give you all the choices you need.



Equipment that you listen to

Our modern digital microphone consoles guarantee the highest degree of convenience. They are individually programmed according to your requirements and can be integrated into your system with a bus system.

With graphical user interface operation via touch screen or PC, our smart models are also suited for integration into building management systems or touch screen terminals. Existing software interfaces ensure smooth integration into the network.

Microphone consoles



Digital microphone consoles

Freely programmable digital consoles with bus system connection. Up to 255 consoles per bus!



Graphical user interface

Operation from touch screen or computer with LAN connection or integrated into an existing building management system.



Fire brigade call station

Freely programmable for voice alarm control and indicating equipment (VACIE) compliant with the EN 54-16 standard.

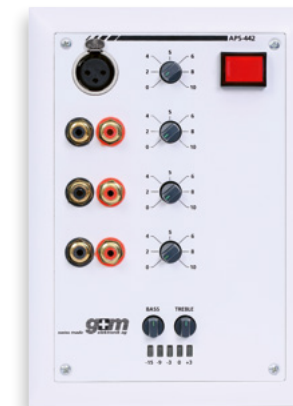
Custom-made

An acoustic system is only as good as its ease of operation by remote control. User-friendly convenience is the magic word to which we at g+m elektronik ag are especially committed in the development of our remote controls. The secret of our successful devices lies in the fact that only the most important controls are accessible and erroneous handling is virtually ruled out.

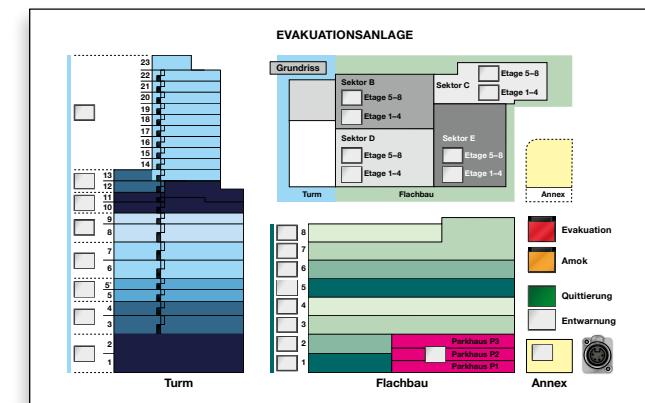
Our remote controls can be connected to microphones and musical instruments where volume and resonance can be individually regulated. You activate your acoustic system simply by pressing an illuminated pushbutton. In addition, you have a choice of programming options such as phantom power or priorities.

Remote controls

Remote control consoles



APS-442



Project-specific control panel



APS-441-2HU incl. GM-7421-ARC / GM-7420-ARC



ARC-Console incl. GM-7421-ARC / GM-7420-ARC

Secure sound reinforcement

Speaker line monitoring

Standard

Up to 32 speaker lines can be monitored without interruption. Short circuits, interruptions, ground connection and impedance modification are automatically located even during musical productions.



APS-178.1-32-EV

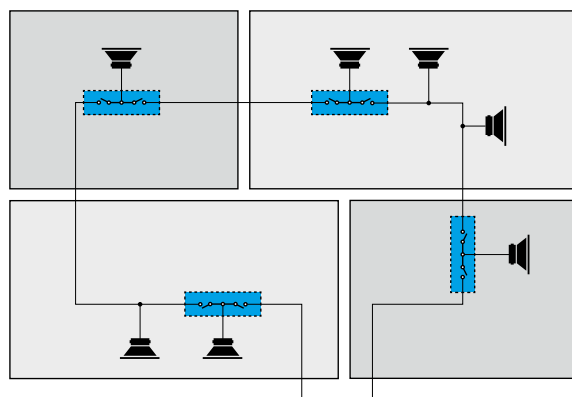
Loop system

Speaker lines can be integrated into the system using standard cables. In accordance with the NEN and VDE user standards, you can dispense the required functional integrity in loop wiring systems if the system can ensure that an individual fault does not affect the functioning of the voice alarm system.



APS-180-LOOP

- No expensive E 30 cabling
- Optimal safety through redundant connection (loop)
- Uninterruptible location of short circuit, interruption and ground connection
- Automatic isolation of the problem zone
- Up to 12 loops per device
- Up to 400 isolators per system
- Bidirectional communication between system and isolator unit
- Loop length up to 600 m
- Via 2-wire cabling



■ Isolator unit



Extra power

We reinforce the strengths of our APS® solutions. Based on this principle, we have equipped our systems with state-of-the-art digital amplifiers. The 100 V amplifiers with class D technology are an additional guarantee of top quality. With 50 % higher efficiency they clearly outperform the previous analogue technology.

Additional plus: the devices reduce the demand for emergency power by half and require only half as much space compared to conventional analogue amplifiers. The new compact high-tech amplifiers with their PFC switched-mode power supply guarantee 100 % constant power at full capacity utilisation thanks to our class D cutting-edge technology.

Amplifiers

Single amplifiers



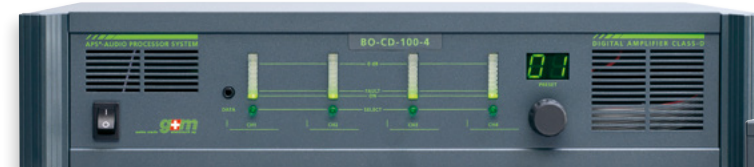
BO-CD-150-EV	Digital Class-D amplifier	1 × 150 W
BO-CD-250-EV	Digital Class-D amplifier	1 × 250 W
BO-CD-500-EV	Digital Class-D amplifier	1 × 500 W

Dual amplifiers



BO-CD-150-2-EV	Digital Class-D amplifier	2 × 150 W
BO-CD-250-2-EV	Digital Class-D amplifier	2 × 250 W

Quadruple amplifier



BO-CD-100-4-EV	Digital Class-D amplifier	4 × 100 W
BO-CD-200-4-EV	Digital Class-D amplifier	4 × 200 W

Sound experience

Make way for a unique module series from g+m elektronik ag: with the APS®-ARIA family you experience sound in the right dimension. At a push of a button you can adapt the smart acoustic system at any time to the number of listeners or the respective room size. A valuable expansion especially in separable rooms.

With every APS®-ARIA module you digitally control 4 independent channels with DSP functions such as dynamic response, delay, equalizer and volume. Stored settings can be retrieved at any time. Smart acoustics at its best.

APS®-ARIA modules



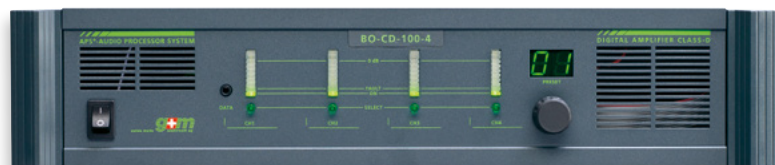
Input module APS-11-4
For churches, gyms and auditoriums



Output module APS-33-4
For large church interiors (cathedrals), tunnels and railway stations

The 4-channel input module has 4 selectable line or microphone inputs. You can easily adjust the respective microphones with the help of specific parameters. You control preamplification and volume individually using the keys and rotary dial.

You can use up to eight 4-channel DSP output modules per APS® system. Two different volumes for voice and music can be set in each of the four independent output channels of the module.



System module APS-46.1-EQ-RC and amplifiers BO-CD-xxx-4
For churches, gyms, auditoriums and shopping centres

With the APS®-ARIA system model APS-46.1-EQ-RC or the amplifiers BO-CD-xxx-4 you customise your acoustic system optimally to the given spatial acoustics and to the number of listeners present. Divisible rooms can be provided with their own individual sound depending on the division.

THE APS®-ARIA FAMILY GIVES YOU THE PERFECT SOUND EXPERIENCE:

Echo prevention (delay)

Time delays of sound waves at different acoustic levels are balanced very accurately. No interfering echo, instead you get perfect comprehensibility in the entire space.

Acoustic signal optimisation (dynamic response)

Peak levels are attenuated to prevent over modulation of the audio signal and to accentuate quiet passages. Voice and music then become a joy to hear.

Audio fine-tuning (equalizer)

The frequency response is individually adapted to the acoustic conditions to produce a suitable sound. This makes the tone quality of voice and music into a perfect sound experience!

Volume customisation (level)

The volume is optimally adjusted for every individual channel according to the different space conditions and is immediately switched in the event of emergency announcements.

Simple and convenient handling: the volume is individually adjusted, preset parameters are retrieved and stored messages and functions are activated via the ARIA remote control.

APS®-ARIA modules

Remotecontrol units

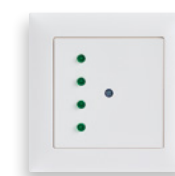
With connection to RC16 bus (ARIA):



GM-7429-BRIDGE
For connection to media control system



GM-7420
Volume control



GM-7421
4-button module



GM-7422
Source selection and volume control

APS® modules

Central control unit	APS-9000	All-in-one control unit for voice alarms, electroacoustic emergency warning systems, public address systems and media technology
Amplifier	BO-CD-100-4-EV	Digital 100 V amplifier, 4 x 100 W, EV version monitored according to EN 54-16
	BO-CD-200-4-EV	Digital 100 V amplifier, 4 x 200 W, EV version monitored according to EN 54-16
	BO-CD-150-2-EV	Digital 100 V amplifier, 2 x 150 W, EV version monitored according to EN 54-16
	BO-CD-250-2-EV	Digital 100 V amplifier, 2 x 250 W, EV version monitored according to EN 54-16
	BO-CD-150-EV	Digital 100 V amplifier, 150 W, EV version monitored according to EN 54-16
	BO-CD-250-EV	Digital 100 V amplifier, 250 W, EV version monitored according to EN 54-16
	BO-CD-500-EV	Digital 100 V amplifier, 500 W, EV version monitored according to EN 54-16
	BO-CD-155	Constant current amplifier with a sine power of 150 W for alarm transmission for people with hearing difficulties
Line monitoring	APS-178.1-6/16/32-EV	Loudspeaker line monitoring 6-way/16-way/32-way module for uninterrupted, continuous monitoring of loudspeaker lines
	APS-180-Loop	Loop monitoring for uninterrupted, continuous monitoring of up to 70 loudspeaker lines
System housing	MC-03	System housing for installing APS®-APROSYS modules
Input and output modules	APS-01-EV	Input module for connecting dynamic microphones, EV version monitored according to EN 54-16
	APS-16.3-D4	Module for serial microphone consoles with 4 monitored MC-LINK (RJ45) connections
	APS-04.1	Input interface for external remote controls, for connecting the APS-44x remote control units
	APS-11-4	DSP input module with 4 selectable audio or microphone inputs. Microphone settings can be synchronised via prepared setting parameters
	APS-40.1	Program selection module with 4 audio channels for playback/recording of internal and external audio sources
	APS-31.2	Adjustable output for signal transmission to audio components. Control buttons for volume and high/low frequencies

Other modules and components can be found on our website gm-elektronik.swiss

	APS-33-4	4-channel digital signal processor module (DSP), NF outputs
	APS-64.1	Adjustable output module for 4 separate 100 V loudspeaker lines, for cascading additional modules
	APS-74.1	Output module for 4 separate 100 V loudspeaker lines, for cascading additional modules
Signal source modules	APS-26	Module for playback of MP3 or WMA files from an external storage medium (USB connection)
	GM-1525-B	Internet radio with access to over 20 000 stations. Music player for simple handling and navigation of saved music on a USB stick or network. File formats AAC / AAC+, MP3, WMA, WAV
FAS interfaces	APS-56.1-NL	Processor-controlled alarm interface module certified according to EN 54-16 for 8 external, monitored control contacts. For connecting pushbuttons, switches, relays or other systems (e.g. manual call points or fire alarm control panels)
	APS-53-SEC-XX	Interface module with 4 control inputs, for connecting to a fire alarm control panel
	APS-59.1-SEC	Intelligent interface for connecting to a fire alarm control panel (FAS)
Additional modules	APS-57.1	Quartz-controlled programmable system clock with switching functions and slave clock control
System and function modules	APS-60	Module for audible control of audio signals in the selected system bus
	APS-61	Module for audible control of 100 V signals
	APS-50.1	Interface module with 8 illuminated, individually labelled buttons
	APS-52	Interface module for 8 external control contacts, for connecting pushbuttons, switches, relays or other systems
	APS-54.1	Function module with 4 illuminated, individually labelled buttons and 4 external contact inputs
	APS-75	Switching module with 4 power relays (changeover contacts), functions can be programmed separately
Power and emergency power supply	APS-90.2	Universal power supply module for supplying the components installed in the APS system with power. For systems with low amplifier performance or configurations without amplifiers
	APS-151.1 (-EX)	Emergency power supply for VACIE and EWS according to EN 54-16. Housing for holding and wiring of batteries, with integrated temperature sensor and safety elements

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