APS®-APROSYS

Modular system solutions

Swiss Made

Often invisible. But always loud and clea. 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 whatwe are with the well-founded expertise so typical of our company: They have made us to a market leader.

CONTENT

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 ideally positioned for the future. Thanks to features such as LAN networking and DSP technology, our APS® technology meets your very high demands. Made in our own plant this brand sets standards globally.

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». 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 acoustic systems, PA and voice alarm as well as emergency warning systems has many different interfaces. It offers you maximum flexibility in case you would like to link 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 guide 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 Volt 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 characterized 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 anywhere where many people come together.
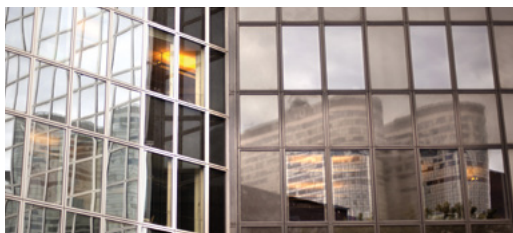
Where is the APS® technology used?

SHOPPING Do your purchases in a relaxed atmosphere – it invigorates stores and makes cash registers ring out more often. Public address systems of g+m elektronik ag play their role here with pleasant music and a soundtrack of advertising announcements. Integrated in the on-site security arrangement, they contribute to people's enjoyment of the shopping experience.

CATERING Discreet music can get visitors' taste buds watering. Depending on style, be it young and modern or from classy to elegant. With the appropriate background music an electroacoustic system from g+m elektronik ag provides an inviting ambiance in every restaurant or hotel.

PUBLIC BUILDINGS In the museum, in the theatre, in a multi-purpose hall or in an office building – everywhere where many people come and go everyday, easily understandable information is in demand. Musical recordings also boost trust and comfort in public areas.

PUBLIC TRANSPORT Anyone who wants to ride a bus or train relies 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 good journey!

SPECIALITIES 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 private preference for the perfect sound experience. g+m elektronik ag always offers a custom solution.

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

CHURCHES A space for reflection, a space for taking time to pause, a space for celebration. Church interiors emanate 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.

SCHOOLS & UNIVERSITIES Anywhere where people are learning new things together, that is where «adaptive» electroacoustic systems from g+m elektronik ag are also in demand. They can be used in many versatile ways. They can be integrated based on individual requirements and pass every test when it comes to on-site security.

SPORTS CENTRES & FACILITIES When it's about valuable points, decisive seconds or shooting for the goal, acoustics always play in the big leagues. The acoustics can motivate the athlete or fill the public with enthusiasm. Public address systems from g+m elektronik ag meets every sporting challenge.

HOSPITALS First aid is also a question of easily understandable information. Public address systems from g+m elektronik ag prove to be valuable anywhere where health has the topmost priority be it in the maternity ward or the operating room. They convey safety and support the hospital team as they do their day-to-day work.

HOMES FOR THE ELDERLY Presentations and music worth listening to keep people young. Whether for therapy, events or information purposes – in facilities for seniors public address systems from g+m elektronik ag have demonstrated that they cope with the acoustic needs of each age.

Sophisticated operation

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 with modem and integrated RS-232 interface. Possible errors or changes are immediately located and rectified using practical diagnostic tools. You then minimize critical downtimes and reduce maintenance costs.

Powerful programming software

Our new programming software also promises maximum efficiency: it is tailored precisely to top performance 16-bit processors. 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 individual programmed according to your needs and can be integrated into your system with a bus system or LAN connection.

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

Digital microphone consoles

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

Graphical user interface

Operation from touch screen or computer with LAN / RS-232 / RC-16 bus connection or integrated into an existing building management system.

Firefighters microphone-panel

Programmable Firefighters microphone-panel (VACIE) compliant with the EN 54-16 standard.

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- ○ POWER ON
- ○ FAULT
- ○ SYSTEM FAULT

- ○ READY
- ○ POWER FAULT
- ○ 100 V AUDIO FAULT

- ○ INDICATOR TEST
- ○ FAULT RESET
- ○ SILENCE BUZZER

BO-CD-200-4

APS®-AUDIO PROCESSOR SYSTEM

DIGITAL AMPLIFIER CLAS

0 dB

FAULT
ON

SELECT

01
PRESET

DATA

CH1   CH2   CH3   CH4

swiss made g+m elektronik ag

APS-9000

THE FUNCTIONAL UNIT WITH A FUTURE

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 master-mind, it networks your proven APS®-APROSYS system modules with new digital applications. This makes your voice alarm and audible system even more powerful and efficient.

APS®-APROSYS is the intelligent system so-lution 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), sound sys-tems for emergency purposes (SSEP) and gene-ral public address solutions.

Forward-looking design

Excellent audio quality
The APS-9000 provides even better audio qua-lity 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 unit hight. The APS-9000 is individually pro-grammable and also scalable for complex plant configurations.

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

Managed ethernet switch for perfect data management
The four integrated managed ethernet ports are used to connect the graphical user interfaces, configuration software, remote maintenance, control and indicating equipment, control cen-tres and building automation systems.

Compact, compatible, expandable

The APS-9000's capabilities
- 4 analog audio inputs for microphones and music sources (2 monitored)
- 2 analog audio outputs 0 dB
- 8 programmable buttons / LEDs
- Audio LAN AES67 with 12 input channels and 4 output channels
- System monitoring with logfile and contact for error forwarding
- 4 channel MP3 and WAVE player
- 8 dig. inputs selectable monitored (EN 54-16)
- 4 digital dry contact outputs
- 2 inputs for microphone consoles
- DSP functions: equalizer, delay, expander, compressor / limiter
- RC16 bus for remote control
- 3× RJ-45 network / support functions
- Operation via Web-Server (in progress)

Sound experience

Now it's time 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 customize 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. That is smart and perfect acoustics.

APS®-ARIA modules

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

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.

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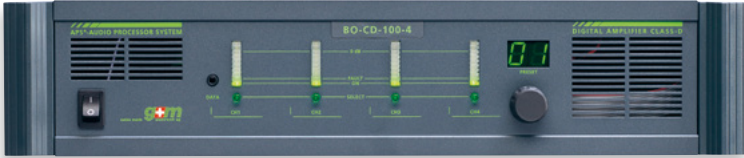For large church interiors (cathedrals), tunnels and train stations

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
For churches, gyms, auditoriums and shopping centres

With the APS®-ARIA system model APS-46.1-EQ-RC you customize 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.

Digital amplifier BO-CD-100-4-EV
For churches, shopping centres and conference rooms

As an EV variant this compact digital multiple amplifier is the optimal solution for voice alarm inside complex space situations pursuant to EN 54-16. The innovative DSP technology makes this possible. The 4-channel DSP amplifier has four independent output channels where you can set two different volumes for voice and music.

WITH THE APS®-ARIA FAMILY YOU GET THE CONSUMMATE 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 optimization (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 relationships to produce a suitable sound. This makes the tone quality of voice and music into a perfect sound experience!

Volume customization (level)
The volume is optimally adjusted for every individual channel according to the different space conditions and is immediately switched in case of emergency announcements.
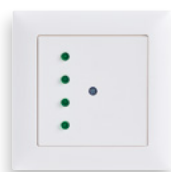

Simple and convenient handling: The volume is individually adjusted, preset parameters are called up and stored messages and functions are activated through the ARIA remote control.

With connection to RC16 bus (ARIA):

GM-7420
Volume control

GM-7421
4-button module

GM-7422
Source selection
and volume control

GM-7429-BRIDGE
For media
control system

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.
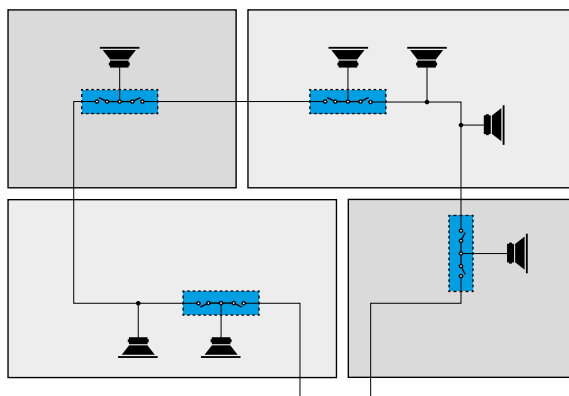

APS-178.1-32-EV

Loop system

Speaker lines can be integrated into the system using standard cables. Pursuant to the NEN and VDE user standards, you can do without the required functional integrity in loop wiring systems if the system can ensure that an individual fault does not affect the function 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 amplify the strengths of our APS® solutions. Based on this principle we have outfitted our systems with the state of the art digital amplifiers. The 100 Volt amplifiers with class D technology are an additional guarantee of top quality. With 50 percent higher efficiency they clearly overtake the previous analog technology.

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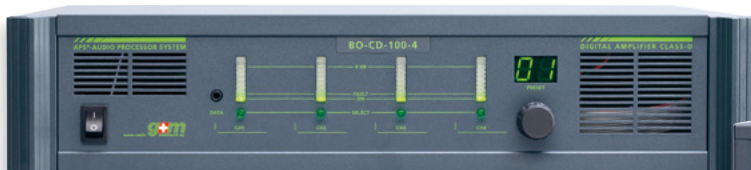
Amplifiers

Single amplifiers

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

Dual amplifiers

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

Quadruple amplifier

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

Reaching your target market

Let your advertisement speak for itself. With the digital APS-24.2 message player you can freely choose when and where to play which advertisements. Various texts and text groups can be individually configured so that you can convince customers always at the right time in the right place with your advertising message.

From the grouping of advertising text files, to the timetable and targeted zone selection for your recording – you simply choose all the functions of the APS® system through the graphical user interface on the display screen.

Message player

Real-time clock
with summer / winter time switching

LAN connection
to import by central customer specific data via internet

Access levels
facilitate user-friendly operation

Very simple configuration
via web browser

Time-controlled activation
of advertisement blocks thanks to the integrated time planner

Manual triggering
of advertisement blocks via microphone console or 4-button module GM-7421

Freely definable advertisement files
in any length and order

Zone-specific advertising texts
at individual times, in certain zones

Configuration sample:

Not breakable	Start date	End date	Active from	Active until	Active on	Rhythm of rep. Slowly	Fast	Folder / File	Gong signal	Current State	
no	always	always	08:00	18:00	Mo Tu We Th Fri Sa So	00:15	00:01	File: Why	4-klang Gong kurz	active	⊙⊗
yes	01.06.2016	31.08.2016	16:50	16:51	Mo Tu We Th Fri Sa So	00:01	00:01	File: Glöckli	4-klang Gong kurz	active	⊙⊗
no	always	always	19:00	19:01	Mo Tu We Th Fri Sa So	00:01	00:01	File: Break chime	4-klang Gong kurz	active	⊙⊗ ⊕

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APS-9000 | APS°-AUDIO PROCESSOR SYS

- ● POWER ON
- ○ FAULT
- ○ SYSTEM FAULT
- ○ READY
- ○ POWER FAULT
- ○ 100 V AUDIO FAULT
- ○ INDICATOR TEST
- ○ FAULT RESET
- ○ SILENCE BUZZER

APS-57.1

APS-64

APS-00   APS-00   APS-00   APS-54

FRE - 03.12.2021
14:56:19   ↑RTC

OK

CEL

5   6
4
2
0   VOLUME   10

5   6
4
2
0   VOLUME   10

Zone 1

Zone 3

ERROR
SYNC
BUS
CLOCK

1 5
2 6
3 7
4 8

CIRCUIT

SD-CARD

5   6
4
2
0   VOLUME   10

5   6
4
2
0   VOLUME   10

Zone 2

Zone 4

Erhöhung

DIGITAL AMPLIFIER CLASS-

BO-CD-200-4

0 dB

01
PRESET

FAULT
ON

SELECT

APS°-AUDIO PROCESSOR SYSTEM

DATA

CH1

CH2

CH3

CH4

swiss made   **g+m**
elektronik ag

Easy to control

An acoustic system is only as secure as when it can be operated easily via remote control. User-friendly convenience is the magic word to which we at g+m elektronik ag especially dedicate ourselves 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.
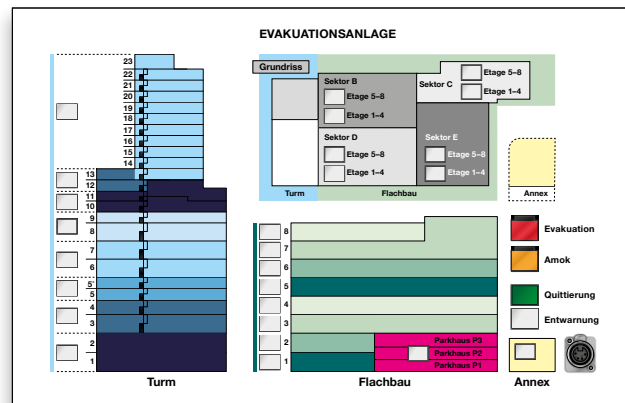
Our remote controls can be connected to microphones and musical instruments where volume and resonance can be individually regulated. You activate your acoustic system simply by pressing an illuminated pushbutton.
In addition, you have a choice of programming possibilities available such as phantom power or priorities.

Remote controls

Remote control consoles

APS-442

Project based Control Panel

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

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

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 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

The acoustic voice alarm allows 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 disseminated. 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 or wrong reactions can be avoided, people escape more quietly and orderly, and the speed of escape increases.

Information that arrives selectively

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, senior homes, factory halls, schools and universities, banks, sports facilities, hotel and conference buildings, administrative buildings and train stations, among others.

Product standard EN 54-16

The acoustic voice alarm system is an important part of the entire safety concept. Therefore, the system must be guaranteed, available and fail-safe as stipulated by the EN 54-16 standard. Ongoing self-monitoring of the audio signal path and the absolutely necessary periphery allows the acoustic voice alarm system to identify safety-related faults within 100 seconds and display these to the system technician.
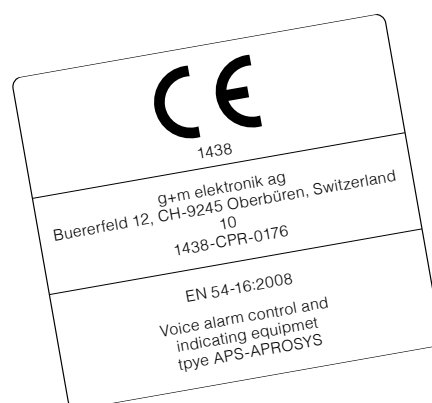
In concrete terms this means that the system - from the microphone capsule, the input modules and amplifiers to all the speaker lines - is monitored independently.

This also includes the digital memories of the audio signal sources for alarm texts. The likewise controlled periphery consists of the main power supply, the emergency power supply as well as the battery charging, among others. If faults occur during monitoring, these are logged in the system at any time in a traceable manner.

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).

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1438-CPR-0176

EN 54-16:2008
Voice alarm control and
indicating equipmet
tpye APS-APROSYS

CERTIFIED HARDWARE MONITORING

☑ These applications are monitored as per the EN 54-16 standard

☑ Central
processor control, line voltage,
emergency power supply, fault logging

☑ Fire department microphone
microphone capsule,
signal amplifier, line

☑ Evacuation console
microphone capsule, signal amplifier,
analog and digital line

☑ Digital text device
voice mail, signal amplifier,
control

☑ Speaker lines
speaker impedance, short-circuit
and ground connection

Fire alarm

☑ Fire alarm interface

☑ Amplifiers
output signal, excess tempera-
ture, line and battery voltage

☑ Alarm signal generator
generator, signal amplifier,
control

☑ Emergency power supply
battery capacity, line voltage and
charging current

Monitoring modules:

APS-178.1-xx	Impedance monitoring unit for up to 32 speaker lines without music interruption
APS-177.2	Central unit for EV monitoring EN 54-16
APS-177.2-LAN	Central unit for EV monitoring EN 54-16, including LAN monitoring

APS® modules

Music and signal sources, programmable	APS-19.2	MP3 chime and siren module, 30 melodies
	APS-24.2-LAN	LAN text unit for recording and playback of an unrestricted number of texts of unrestricted length – configuration by means of Web browser
	GM-1525-B	Internet radio with FM / RDS / DAB / DAB+, Bluetooth
Function / control modules, programmable	APS 46.1	4-channel DSP module, with equalizer, delay, volume control, dynamic and remote control
	APS-50.1	Universal switching and control module with 8 illuminated pushbuttons
	APS-52	Control module for 8 functions from external buttons, contacts
	APS-53-SEC-XX	Switching and control module, for 4 control circuits from external voltages (12 / 24 / 48 V)
	APS-54	Switching and control module with 4 illuminated pushbuttons, for special functions, with remote activation
	APS-56.1-NL	Control module with 8 monitored inputs
	APS-57.1	Master clock with 8 circuits
	APS-58	Communication module for RS 232 interface, 8 conditions, 8 outputs
	APS-59.1-SEC	Intelligent fire alarm interface
	APS-60	Control loudspeaker with amplifier, selector switch LF bus 1–4
Power supply modules	APS-90.2	Power module 230 V AC / 48 V DC, 3 A
	APS-151.1	Emergency power supply 48 V DC, 24 Ah, 3 units height, 19"
Output modules, programmable	APS-31.1	LF output module with additional Open Collector, VU meter and volume control
	APS-33-4	4-channel DSP output module with delay, equalizer, compressor / limiter, volume control
	APS-64.1	Module with 4 controllable and switchable loudspeaker lines 100 V, including int. / ext. control bypass, 250 W
	APS-74.1	Module for switching 4 groups 100 V, including external control bypass, 250 W
	APS-75	Relay module for controlling special functions (4 relays)

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

Monitoring modules in accordance with EN 54-16 EN 60849 NEN 2575	APS-177.2-EV	Central processor monitoring module in accordance with international safety standards (EU Standard)
	APS-178.1-6/16/32-EV	Digital line/impedance monitor, switchable, 6/16/32 channel
	APS-180-Loop	Interruption free line monitor with 2-wire loop line
Processor modules	APS-9000	APROSYS control unit 1HE, according to standard EN 54-16
	APS-990	Central processor module with data memory, freely programmable
System housings MC-03		8 module slots with I²C bus connection 1 module slot without I²C bus connection
System output stages BO-CD-XX	BO-CD-150 BO-CD-155 BO-CD-250 BO-CD-500 BO-CD-100-4 BO-CD-200-4 BO-CD-150-2 BO-CD-250-2	150 W Content power (Sinus) 150 W Content power (Sinus) for induction loops 250 W Content power (Sinus) 500 W Content power (Sinus) 4 × 100 W Content power (Sinus) 4 × 200 W Content power (Sinus) 2 × 150 W Content power (Sinus) 2 × 250 W Content power (Sinus)
Programmable input modules for APS® central control panels	APS-01-EV	In accordance with Standard EN 54-16, with preamplifier, for dynamic microphone, capacitor microphone symmetrical, AUX asymmetrical
	APS-04.1	For remote controls APS-440, APS-451, APS-340 and ARC-340
	APS-11-4	4-channel DSP input module, selectable microphone or audio-inputs with delay, equalizer, compressor/limiter, volume control
	APS-16.3-D4	Input module with interface for up to 32 parallel, digital microphone command consoles
	APS-18.4	Digital telephone interface (SIP) from any number of telephone stations to PA system

Acoustics | Clocks | Evacuation

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