

# Plena Voice Alarm System

## Application Note: Schools

- ▶ EN 54-16, ISO 7240-16 and EN 60849 certified
- ▶ For small- to medium-sized applications with up to 60 zones
- ▶ Built-in intelligent message manager
- ▶ Plug-and-play installation with PC configurability
- ▶ Interconnects via CAT5 cable



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**EN54-16** EVAC Certified  
Emergency  
Voice Alarm

### Introduction

The Plena Voice Alarm System is the ideal sound management solution for schools. In addition to mandatory voice alarm functionality for evacuating staff and students, voice alarm systems for schools should also include chime tones for notifying the start/finish of lessons, plus public address functionality for individually calling classrooms or a public area.

BGM is not essential. Schools are typical examples of applications with a large number of zones each with a relatively low output power requirement per zone. The main priorities are speech intelligibility and compliance with EN 54, ISO 7240 and EN 60849 standard. All necessary requirements and more are met by the Plena system.



Zone

Zone 7-12

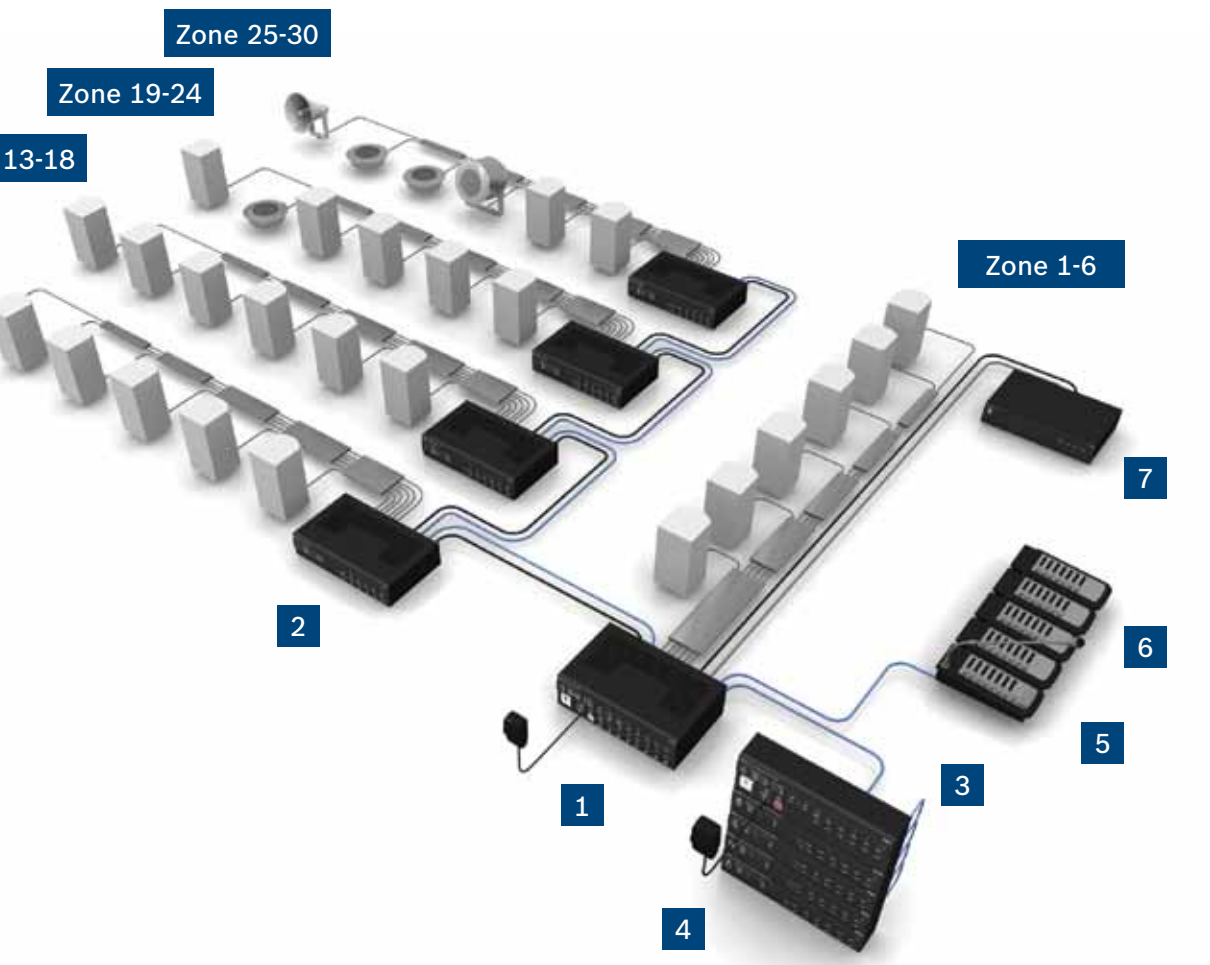
### Summary of requirements

- ▶ Typically 20 to 60 zones (in high schools)
- ▶ Good speech intelligibility is the main priority
- ▶ Low power requirement (1 loudspeaker) per classroom
- ▶ Fireman's panel by main entrance
- ▶ Call station in main office
- ▶ Additional public address functions such as chime tones desirable
- ▶ Background music (BGM) in recreation areas is optional

### Solution for a 30-zone system

The Plena Voice Alarm System Controller handles message routing to 6 zones, the remaining 24 zones require four additional 6-zone routers. The office is equipped with a call station plus keypads for individually addressing zones, while a fireman's panel (with overall priority) is built in by the main entrance. Since a classroom has a low ambient noise level, 1 loudspeaker per classroom is usually sufficient, keeping the total power requirement relatively low. Outside areas such as playgrounds and sports fields will require weatherproof horn loudspeakers.

The Plena Voice Alarm System is designed for plug-and-play installation, and is easily configured using DIP switches or software for more advanced configuration. Once configured, the PC is disconnected. System interconnections are made using standard RJ45 connectors and CAT5 cabling. Up to 255 spoken evacuation messages can be stored. Messages can also be merged to allow more flexible use of pre-recorded messages.



- 1 Controller
- 2 Router
- 3 Remote control panel
- 4 Remote control panel extension
- 5 Call station keypad
- 6 Call station keypad
- 7 240 W power amplifier

Zones		
Zones 1-22	Classrooms	22 x 6 W cabinet loudspeakers
Zone 23	Toilets/changing rooms	4 x 6 W ceiling loudspeakers
Zone 24	Staff meeting room	1 x 6 W cabinet loudspeaker
Zones 25-26	Offices	2 x 6 W cabinet loudspeakers
Zone 27	Corridors	4 x 6 W sound projectors
Zone 28	Assembly hall	2 x 6 W ceiling loudspeakers
Zone 29	Lunch canteen	2 x 6 W ceiling loudspeakers
Zone 30	Playing fields	1 x 10 W horn loudspeaker
		<b>Total 232 W</b>

### System description

The system controller features a built-in 240 W power amplifier, making it possible to drive up to 40 loudspeakers with a power handling capacity of 6 W each. This is sufficient for a medium-sized high school with 24 classrooms, 4 toilets/changing rooms, a staff meeting room and 2 offices, each requiring a single loudspeaker. The canteen, assembly hall, playing fields and corridors typically require more loudspeakers per zone. An additional Plena Power Amplifier is used as a spare amplifier.



### Future-proof upgrade

More zones and extra power per zone can be added by incorporating additional routers and Plena Power Amplifiers (up to 1000 W per 6 zones).

### Certified solutions

For the installation to be fully EVAC-certified, loudspeakers and cabling must also conform to the relevant standards. Bosch can provide training and certification for partner installers – details available on request.

### Complete security solutions

Bosch Security Systems offers a wide range of security, safety, and communication solutions that are relied upon every day in applications and places around the world, from government facilities and public venues to businesses, schools and homes.

**For more information about the Plena Voice Alarm System, please feel free to contact your nearest Bosch representative or visit our website: [www.boschsecurity.com](http://www.boschsecurity.com).**



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To learn more about our product offering, please visit [www.boschsecurity.com](http://www.boschsecurity.com) or send an e-mail to [emea.securitysystems@bosch.com](mailto:emea.securitysystems@bosch.com)

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