BOSCH

Invented for life

Bosch Voice Evacuation Systems

- ▸ **Digitally-recorded automatic evacuation message (up to 4 minutes of message capacity)**
- ▸ **Alarm and alert signals**
- ▸ **Live microphone override of message and tone**
- ▸ **Compatible with 12 V or 24 V, analog-addressable or microprocessor-based fire alarm control panels (FACPs)**
- ▸ **Clean dead-front construction**
- ▸ **Easy installation and operation**
- ▸ **24-hour backup with 7 Ah batteries installed (batteries not supplied)**

The Bosch Voice Evacuation systems and expansion panels provide a variety of options that can be easily added to an existing fire alarm control panel system for area of assembly applications and for high-rise voice evacuation not requiring firemens' phones. Choose up to 2000 W of audio amplifier power to meet your speaker power requirements. You can supervise multiple zones through your choice of zone splitters.

The EVAX25, EVAX50, and EVAX100 respectively provide 25 W, 50 W, and 100 W of audio amplifier power in a standard-size enclosure. The EVAX150 has one 50 W audio amplifier and one 100 W audio amplifier in a double-size enclosure. The EVAX200 has two 100 W amplifiers in a double-size enclosure.

Customize these systems to satisfy most application requirements by adding expander panels, expander modules, or zone splitters. Expanders can be grouped together in any combination to provide up to 2000 W of audio power.

System Overview

BOSCH Voice Evacuation Systems

All Bosch voice evacuation systems include all the necessary features to provide an effective voice evacuation system:

- Audio amplifier
- Digital message repeater (DMR)
- 120 VAC power transformer and battery charger
- Tone generator
- Paging microphone
- Surface-mount or semi-flush-mount enclosure with a hinged, key-locked door in charcoal-gray (standard) or red (optional)

Optional Expander Panels

The Bosch system expander panels provide an easy and cost-effective way to increase the output power of a Bosch voice evacuation system. They can also provide a manually-activated emergency paging panel for buildings. Features of the EVAX25E, EVAX50E, and EVAX100E:

- Audio amplifier
- 120 VAC power transformer and battery charger
- Tone generator
- Paging microphone
- Standard-size enclosure with a hinged, key-locked door

The EVAX150E and EVAX200E expander panels provide the same features with additional power in a double-size enclosure housing two amplifier modules.

Use the EVAX25EM, EVAX50EM, or EVAX100EM expander panel when a 25 W, 50 W, or 100 W audio expander is needed with its own enclosure. Use the EVAX150EM and EVAX200EM for expansion when greater power is required in the larger enclosure configuration. The EM models have all the features of the E models except they are without a paging microphone.

Optional Expander Modules

The expander modules (EVX- models) can increase the capacity of any Bosch voice evacuation system or expander panel. They do not have paging microphones and are intended for installation in UL Listed enclosures (not supplied). Features of these modules:

- Audio amplifier
- Power regulator and battery charger
- Tone generator

Optional Zone Splitters

The EVX-4Z and EVX-2ZA zone splitters allow the supervised output of any Bosch audio amplifier to supervise multiple zones. Features of these zone splitters:

- Manual selection of any or all voice evacuation zones for emergency paging
- Automatic selection of voice evacuation zones by connecting normally-open contacts from the FACP or other auxiliary control system
- Annunciation of either active or faulted zone status by individual LEDs
- Compatibility with jumper-selectable 25 V and 70 V amplifier outputs

The EVX-4Z has four Class B zones. The EVX-2ZA has two Class A zones.

Functions

Digital Message Repeater

Each of the Bosch voice evacuation systems (EVAX25, EVAX50, EVAX100, EVAX150, and EVAX200) includes a digital message repeater (DMR). The systems come with the following standard 15-second message programmed:

"Attention, please. There has been a report of an emergency. Proceed calmly to the nearest exit and leave the building immediately. Do not use the elevators; use stairwells where necessary. All handicapped occupants shall use the building evacuation plan."

The voice evacuation message is broadcast until the FACP resets or until emergency personnel interrupt the broadcast with a manual page. When the FACP resets, the voice evacuation system automatically returns to normal operating condition.

The closure of a contact from either the FACP or from any normally-open contact device can cause the broadcast of a chime tone followed by the message "All clear."

Optional primary and secondary messages are available. For further information, refer to the *Bosch Voice Evacuation System's Optional Messages Technical Service Note* (P/N: F01U500869).

Remote Paging Microphones

Remote paging microphones (up to five per EVX-SC supervisory card) are supported through a supervised circuit. Remote microphones may be mounted up to 5000 ft (1.5 km) away from the EVAX voice evacuation panel. An ideal use for a remote microphone is when the FACP and voice evacuation system panels are in an electrical room and you need a microphone in the lobby.

System Settings

Control system operation by DIP switch settings:

- Configure three DIP switches to determine alert tones of Temporal Slow Whoop (default), Hi Lo, Horn, Bell, or 1 kHz.
- Turn the Diagnostic Mode on or off (default).
- Set the AC Power Failure Report for no delay (default) or for a six-hour delay.
- Indicate if batteries are connected to the system. The default setting is batteries are connected.
- Indicate if a microphone is connected to the system. The default setting is a microphone is connected.
- Set the initial delay before a message starts for no delay, 4-second delay, 8-second delay (default), 12-second delay, 16-second delay, 20-second delay, 24-second delay, or 28-second delay. The chosen tone sounds during the delay.
- Set the delay between repeats of the message for a 4-second delay, 8--second delay, 12-second delay (default), or 16-second delay.
- Indicate if the message plays or not. Message on is the default.
- Set the number of times the message plays to one play, two plays, three plays (default), or continuous play.

Certifications and Approvals

Region	Certification	
USA	UL	UOXX: Control Unit Accessories, System (UL864), UOXX2: Control Unit Accessories, System - Component (UL864)
	CSFM	6911-1615: 101, 6911-1615: 102, 6911-1615: 103, and 6911-1615: 104

Installation/Configuration Notes

Compatible Products

The following products are compatible with the Bosch Voice Evacuation Systems:

Category	Product
Expansion Modules	EVX-25 25 W Amplifier with DMR and microphone
	EVX-25E 25 W Amplifier without DMR, with microphone
	EVX-25EM 25 W Amplifier without DMR and microphone
	EVX-50 50 W Amplifier with DMR and microphone
	EVX-50E 50 W Amplifier without DMR, with microphone
	EVX-50EM 50 W Amplifier without DMR and microphone
	EVX-100 100 W Amplifier with DMR and microphone
	EVX-100E 100 W Amplifier without DMR, with microphone
	EVX-100EM 100 W Amplifier without DMR and microphone
Remote Microphones	EVX-RM Charcoal-gray Remote Microphone Panel
	EVX-RMR Red Remote Microphone Panel
Zone Splitters	EVX-2ZA Class A Zone Splitter
	EVX-4Z Class B Zone Splitter

Speaker Placement

Choose speakers that deliver a minimum ambient sound of 15 dB above the normal ambient noise level. In high-ambient noise areas, speakers should be tapped at 15 dB to 21 dB above the ambient noise level and placed closer to one another to ensure that voice messages are intelligible.

The best way to determine speaker placement needs is to conduct a site survey with a decibel meter to measure ambient noise levels; however, some general rules for speaker placement are:

- Locate speakers at all pull stations and in main corridors similar to the layout of conventional fire horns.
- Ensure that all occupied locations are within 50 ft (15 m) of a speaker. Place additional speakers in rooms such as cafeterias and computer rooms. Be sure there are speakers in isolated areas where service personnel might be working.
- For ceiling-mount speakers, use 2 W of speaker power for every 2000 ft^2 (186 m^2) of area covered in open areas and 2 W for every 1500 ft^2 (139 m^2) in divided areas. For wall-mount speakers, use 1 W of speaker power for every 2000 ft^2 (186 m^2) of area covered in open areas and 1 W for every 1500 ft^2 (139 m^2) in divided areas.

Speaker Power Requirements

System power (total wattage) must be sufficient to supply the power required by all of the speakers on the system. Speaker transformers can often be tapped for different wattages (usually, ¼ W, ½ W, 1 W, etc.). A system rated at 25 W of audio power can power a speaker load of 25 W. This can be made up of 25 speakers each tapped at 1 W, 50 speakers each tapped at ½ W, or any mathematical combination that is less than or equal to 25 W.

Speaker Wiring Requirements

The 25 V speaker circuits of most voice evacuation systems are classified as power-limited wiring and can be run with other fire alarm wiring without ill effects. No special cabling is required. Standard power-limited fire alarm cable (FPL) is sufficient for most applications; however, certain addressable systems can generate extraneous noise from their addressable loop. Because these addressable systems cannot use shielded cable, shielding of the evacuation speaker circuit helps to eliminate noise picked up and heard in the speakers. When using 70 V circuits, separate them as described in the National Electrical Code.

Generally, 18 AWG (1.0 mm) wire is adequate for speakers. Heavier wire is needed if loads are high or the runs are long. The following table indicates typical wire lengths for specific wire sizes and speaker loads. It assumes that there is an even distribution of speaker load and that a 20% drop at the last device is allowable.

25 VRMS Output:

Power	18 AWG (1.0 mm)	16 AWG (1.3 mm)	14 AWG (1.6 mm)	12 AWG (2.0 mm)
10 W	1900 ft (579 m)	3050 ft (930 m)	4850 ft (1478 m)	7700 ft (2347 m)
15 W	1280 ft (390 m)	2030 ft (619 m)	3230 ft (985 m)	5140 ft (1567 m)
25 W	760 ft (232 m)	1220 ft (372 m)	1930 ft (588 m)	3080 ft (939 m)

70 VRMS Output:

Power	18 AWG (1.0 mm)	16 AWG (1.3 mm)	14 AWG (1.6 mm)	12 AWG (2.0 mm)
10 W	15200 ft (4633 m)	24200 ft (7376 m)	38360 ft (11692 m)	61100 ft (18623 m)
15 W	10130 ft (3088 m)	16130 ft (4916 m)	25570 ft (7794 m)	40730 ft (12415 m)
25 W	6080 ft (1853 m)	9680 ft (2950 m)	15340 ft (4676 m)	24440 ft (7449 m)

System Power Requirements

All Bosch voice evacuation systems require 120 VAC connected to the system's power transformer. Standby power is supplied, in case of AC power failure, by standby batteries (not supplied). The EVAX25, EVAX50, and EVAX100 require two 12 VDC, 7 Ah standby batteries. The EVAX150 and EVAX200 require four 12 VDC, 7 Ah standby batteries.

Technical Specifications

Environmental Considerations

Relative Humidity:	Up to 95%, non condensing
Temperature (Operating):	+32°F to +120°F (0°C to +49°C)

Mechanical Properties

Color:	Standard: charcoal gray Optional: red
Dimensions (H x W x D):	Standard: 18 in. x 14.5 in. x 4 in. (45.7 cm x 36.8 cm x 10.2 cm) Double-size: 27 in. x 14.5 in. x 4 in. (68.6 cm x 36.8 cm x 10.2 cm)
Material:	16 gauge (1.5 mm) steel

Outputs

Tone and Voice (at 25/70 VRMS):	25 W system: 25 W 50 W system: 50 W 100 W system: 100 W 150 W system: 150 W 200 W system: 200 W

Power Requirements (Battery)

Current (Alarm):	25 W system: 1 A 50 W system: 1 A 100 W system: 2.5 A 150 W system: 1 A 200 W system: 5 A
Current (Standby):	25 W system: 0.18 A 50 W system: 0.13 A 100 W system: 0.18 A 150 W system: 0.31 A 200 W system: 0.36 A
Power (Battery):	24 VDC

Power Requirements (Primary)

Current (Input):	25 W system: 0.8 A 50 W system: 0.6 A 100 W system: 2 A 150 W system: 2.6 A 200 W system: 4 A
Voltage (Nominal Input):	120 VAC

Bosch Voice Systems Information

Bosch Voice Evacuation Systems with DMR and microphone)

Model	Consists of				
	EVAX25	EVX-4Z	EVX-2ZA	Standard Cabinet	Large Cabinet
EVAX25*	1			1	
EVAX25*/4Z	1	1		1	
EVAX25*/8Z	1	2		1	
EVAX25*/2ZA	1		1	1	
EVAX25*/4ZA	1		2	1	

Model	Consists of				
	EVAX50	EVX-4Z	EVX-2ZA	Standard Cabinet	Large Cabinet
EVAX50*	1			1	
EVAX50*/4Z	1	1		1	
EVAX50*/8Z	1	2		1	
EVAX50*/12Z	1	3		1	
EVAX50*/16Z	1	4			1
EVAX50*/2ZA	1		1	1	
EVAX50*/4ZA	1		2	1	
EVAX50*/6ZA	1		3		1
EVAX50*/8ZA	1		4		1

Model	Consists of				
	EVAX100	EVX-4Z	EVX-2ZA	Standard Cabinet	Large Cabinet
EVAX100*	1			1	
EVAX100*/4Z	1			1	
EVAX100*/8Z	1	2		1	
EVAX100*/12Z	1	3		1	
EVAX100*/16Z	1	4			1
EVAX100*/2ZA	1		1	1	
EVAX100*/4ZA	1		2	1	
Evax100*/6ZA	1		3		1
EVAX100*/8ZA	1		4		1

Model	Consists of				
	EVAX150	EVX-4Z	EVX-2ZA	Standard Cabinet	Large Cabinet
EVAX150*	1				1
EVAX150*/8Z	1	2			1
EVAX150*/12Z	1	3			1
EVAX150*/16Z	1	4			1
EVAX150*/4ZA	1		2		1
EVAX150*/6ZA	1		3		1
EVAX150*/8ZA	1		4		1

Model	Consists of				
	EVAX200	EVX-4Z	EVX-2ZA	Standard Cabinet	Large Cabinet
EVAX200*	1				1
EVAX200*/8Z	1	2			1
EVAX200*/12Z	1	3			1
EVAX200*/16Z	1	4			1
EVAX200*/4ZA	1		2		1
EVAX200*/6ZA	1		3		1
EVAX200*/8ZA	1		4		1

* The asterisk (*) is not part of the number; it is a placeholder for indicating the color option. For a charcoal gray enclosure, drop the asterisk (*). For a red enclosure, replace the asterisk (*) with an R.

EVAX Expansion Panels - EM models (without DMR, without microphone)

Model	Consists of				
	EVAX25EM	EVX-4Z	EVX-2ZA	Standard Cabinet	Large Cabinet
EVAX25EM*	1			1	
EVAX25EM*/4Z	1	1		1	
EVAX25EM*/8Z	1	2		1	
EVAX25EM*/2ZA	1		1	1	
EVAX25EM*/4ZA	1		2	1	

Model	Consists of				
	EVAX50EM	EVX-4Z	EVX-2ZA	Standard Cabinet	Large Cabinet
EVAX50EM*	1			1	
EVAX50EM*/4Z	1	1		1	
EVAX50EM*/8Z	1	2		1	
EVAX50EM*/12Z	1	3			1
EVAX50EM*/16Z	1	4			1
EVAX50EM*/2ZA	1		1	1	
EVAX50EM*/4ZA	1		2	1	
EVAX50EM*/6ZA	1		3		1
EVAX50EM*/8ZA	1		4		1

Model	Consists of				
	EVAX100EM	EVX-4Z	EVX-2ZA	Standard Cabinet	Large Cabinet
EVAX100EM*	1			1	
EVAX100EM*/4Z	1	1		1	
EVAX100EM*/8Z	1	2		1	
EVAX100EM*/12Z	1	3			1
EVAX100EM*/16Z	1	4			1
EVAX100EM*/2ZA	1		1	1	
EVAX100EM*/4ZA	1		2	1	
Evax100EM*/6ZA	1		3		1
EVAX100EM*/8ZA	1		4		1

Model	Consists of				
	EVAX150EM	EVX-4Z	EVX-2ZA	Standard Cabinet	Large Cabinet
EVAX150EM*	1				1
EVAX150EM*/8Z	1	2			1
EVAX150EM*/12Z	1	3			1
EVAX150EM*/16Z	1	4			1
EVAX150EM*/4ZA	1		2		1
EVAX150*/6ZA	1		3		1
EVAX150*/8ZA	1		4		1

Model	Consists of				
	EVAX200EM	EVX-4Z	EVX-2ZA	Standard Cabinet	Large Cabinet
EVAX200EM*	1				1
EVAX200EM*/8Z	1	2			1
EVAX200EM*/12Z	1	3			1
EVAX200EM*/16Z	1	4			1
EVAX200EM*/4ZA	1		2		1
EVAX200EM*/6ZA	1		3		1
EVAX200EM*/8ZA	1		4		1

* The asterisk (*) is not part of the number; it is a placeholder for indicating the color option. For a charcoal gray enclosure, drop the asterisk (*). For a red enclosure, replace the asterisk (*) with an R.

EVAX Expansion Panels - E models (without DMR, with microphone)

Model	Consists of				
	EVAX25E	EVX-4Z	EVX-2ZA	Standard Cabinet	Large Cabinet
EVAX25E*	1			1	

Model	Consists of				
	EVAX50E	EVX-4Z	EVX-2ZA	Standard Cabinet	Large Cabinet
EVAX50E*	1			1	

Model	Consists of				
	EVAX100E	EVX-4Z	EVX-2ZA	Standard Cabinet	Large Cabinet
EVAX100M*	1			1	

Model	Consists of				
	EVAX150E	EVX-4Z	EVX-2ZA	Standard Cabinet	Large Cabinet
EVAX150E*	1				1

Model	Consists of				
	EVAX200E	EVX-4Z	EVX-2ZA	Standard Cabinet	Large Cabinet
EVAX200E*	1				1

* The asterisk (*) is not part of the number; it is a placeholder for indicating the color option. For a charcoal gray enclosure, drop the asterisk (*). For a red enclosure, replace the asterisk (*) with an R.

Ordering Information

EVAX25R 25 W Amplifier with DMR and Microphone (red cabinet) — EVAX24R
25 W amplifier with a digital message repeater and a microphone in a standard (45.7 cm x 36.2 cm x 10.2 cm [18 in. x 14.25 in. x 4 in.]) red cabinet.

EVAX25R/4Z 25 W, Four-zone Amplifier with DMR and Microphone (red cabinet) — EVAX25R/4Z
25 W amplifier with one EVX-4Z Zone Splitter, a digital message repeater, and a microphone in a standard (45.7 cm x 36.2 cm x 10.2 cm [18 in. x 14.25 in. x 4 in.]) red cabinet

EVAX25R/8Z 25 W, Eight-zone Amplifier with DMR and Microphone (red cabinet) — EVAX25R/8Z
25 W amplifier with two EVX-4Z Zone Splitters, a digital message repeater, and a microphone in a standard (45.7 cm x 36.2 cm x 10.2 cm [18 in. x 14.25 in. x 4 in.]) red cabinet

EVAX50R 50 W Amplifier with DMR and Microphone (red cabinet) — EVAX50R
50 W amplifier with a digital message repeater and a microphone in a standard (45.7 cm x 36.2 cm x 10.2 cm [18 in. x 14.25 in. x 4 in.]) red cabinet

Ordering Information

EVAX50R/4Z 50 W, Four-zone Amplifier with DMR and Microphone (red cabinet) — EVAX50R/4Z
50 W amplifier with one EVX-4Z Zone Splitter, a digital message repeater, and a microphone in a standard (45.7 cm x 36.2 cm x 10.2 cm [18 in. x 14.25 in. x 4 in.]) red cabinet

EVAX50R/8Z 50 W, Eight-zone Amplifier with DMR and Microphone (red cabinet) — EVAX50R/8Z
50 W amplifier with two EVX-4Z Zone Splitters, a digital message repeater, and a microphone in a standard (45.7 cm x 36.2 cm x 10.2 cm [18 in. x 14.25 in. x 4 in.]) red cabinet

Accessories

D126 Standby Battery (12 V, 7 Ah) — D126
Sealed lead-acid standby and auxiliary rechargeable power supply.

DFP-2 Large Dead Front Panel — DFP-2
Charcoal gray panel fits a large cabinet or back box with door and comes with a lock and key

EVX-BB-2 Large Back Box — EVX-BB-2
Large charcoal-gray back box measures (HxWxD) 27 in. x 14.25 in. x 4 in. (68.6 cm x 36.2 cm x 10.2 cm) and comes without a door

Ordering Information

EVX-BB-2R Large Back Box
Large red back box measures (HxWxD) 27 in.
x 14.25 in. x 4 in. (68.6 cm x 36.2 cm x
10.2 cm) and comes without a door

EVX-BB-2R

EVX-CAB-1 Standard Cabinet
Charcoal-gray standard cabinet measures
(HxWxD) 18 in. x 14.25 in. x 4 in. (45.7 cm x
36.2 cm x 10.2 cm) and comes with a door

EVX-CAB-1

EVX-CAB-1R Standard Cabinet
Red standard cabinet measures (HxWxD)
18 in. x 14.25 in. x 4 in. (45.7 cm x 36.2 cm x
10.2 cm) and comes with a door

EVX-CAB-1R

EVX-CAB-2 Large Cabinet
Large charcoal-gray cabinet measures
(HxWxD) 27 in. x 14.25 in. x 4 in. (68.6 cm x
36.2 cm x 10.2 cm) and comes with a door

EVX-CAB-2

EVX-CAB-2R Large Cabinet
Large red cabinet measures (HxWxD) 27 in. x
14.25 in. x 4 in. (68.6 cm x 36.2 cm x 10.2 cm)
and comes with a door

EVX-CAB-2R

EVX-DR-2 Large Door
Charcoal-gray door fits a large cabinet or back
box

EVX-DR-2

EVX-DR-2R Large Door
Red door fits a large cabinet or back box

EVX-DR-2R

EVX-RM Remote Microphone
Remote microphone in a charcoal-gray cabinet

EVX-RM

EVX-SC Microphone Supervisory Card
supervises up to five remote microphones

EVX-SC