

# Bosch EVAX System - High-rise Applications

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**BOSCH**  
Invented for life



- ▶ Master panel with capability for multiple distributed panels
- ▶ Operates as stand-alone or connected to an FACP
- ▶ Network transmission over fiber optic or copper pair cable
- ▶ Digitized live voice and prerecorded messaging
- ▶ Zone paging control

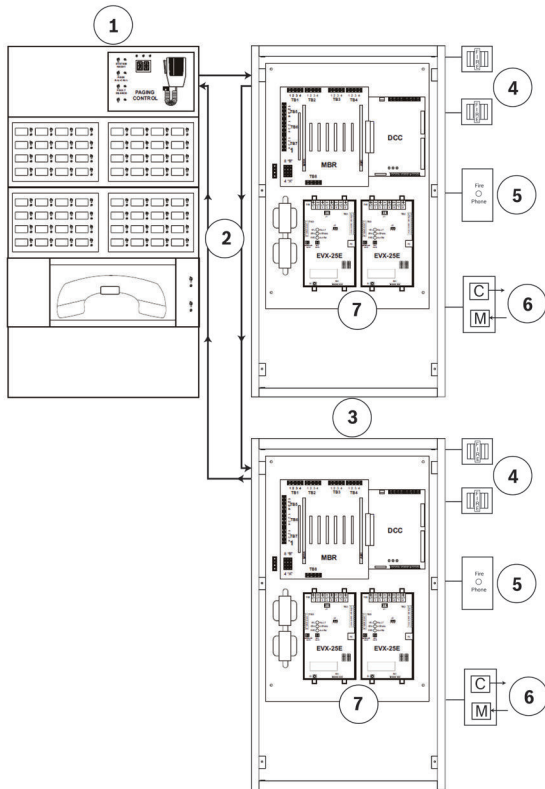
The Bosch EVAX System for high-rise applications is a networked emergency relocation and paging system with integrated two-way fireman's telephone system. It operates with the Fire Alarm Control Panel (FACP) in a building to provide automatic response to life safety emergencies. While providing all necessary features for an effective voice evacuation system, it can easily convey evacuation, stay-in-place, or other public address announcements and automatic messages with multiple channels of simultaneous audio.

Configure your system to include Fire Fighter Phones or Warden Stations as required, for fire fighter communications to supplement 2-way radios and for use in areas of refuge assistance so trapped individuals can communicate with fire command.

Smoke control features include automatic or manual positive or negative pressurization for compartments, floors, or stairwells. The simple to use interfaces allow fire department authorities to take over controls and communicate effectively.

## System overview

The maximum system configuration contains up to 256 Distributed Panels providing up to 2028 monitor and control points.



- 1 Master Panel
- 2 NetComm Loop
- 3 Distributed Panels
- 4 Voice Evacuation Speaker Circuits
- 5 Fire Phone
- 6 Fan and Damper Control and Monitor
- 7 Local Audio Amplifiers (25 W, 50 W, 100 W or combinations yielding 150 W or 200 W)

**Functions**

**Master Panel**

The Master Panel provides the high-speed communication loop (NetComm Loop), master microphone control for live voice (PA) messages, dual channel Digital Message Repeater (DMR) for up to 1000 prerecorded messages, and a 16-switch control module.

**NetComm Loop**

The NetComm Loop provides high-speed RS-485 communications over twisted pair, Category 5 UTP cable. The network can be wired as Style 4 or Style 7 with a maximum of 4000 ft between panels and a total loop length of 50,000 ft. The loop carries data and six audio channels.

**Distributed Panels**

The Distributed Panels communicate with the Master Panel through the NetCom Loop. They typically provide:

- Voice Evacuation Speaker Loops – dedicated data and audio loops using a minimum of 18 AWG wire with end-of-line resistors (EOLR).
- Fire Phone Loops – dedicated audio loop using a minimum of 20 AWG twisted pair wiring with an EOLR.
- Fan and Damper Loops – data loop using a minimum 20 AWG twisted pair wiring on which up to 32 modules can be attached. Each module provides two points (one control and one monitor) for a total of 64 points on the circuit.
- Additionally, local Audio Amplifiers can be connected to the Distributed Panels.

The Bosch Distributed Panels additionally provide specific accessories to support specific functions. The HMB-DP provides four audio circuits, the HMB-DP/P provides four Fire Phone circuits, and the HMB-DP-42 provides 16 audio circuits.

**Certifications and approvals**

Region	Certification	
USA	UL	UOXX: Control Unit Accessories, System (ANSI/UL 864)
	CSFM	see our website

**Installation/configuration notes**

**Compatible Products**

**Main Panel Accessories**

Designator	Description	Part Number
MB-SLC	Switch/LED Card	F.01U.201.669
MB-SSC	Switch Scan Card	F.01U.201.670
MB-MFA	Master Fire Phone Assembly	F.01U.201.671
MB-XI	Extended Input Interface	F.01U.201.672
MB-OI	Output Interface Card	F.01U.201.673

**Distributed Panel Accessories**

Designator	Description	Part Number
EVX-25E	Expander Module 25 W	4.998.143.753
EVX-50E	Expander Module 50 W	4.998.143.785
EVX-100E	Expander Module 100 W	4.998.143.761
EVX-T2885	Power transformer for EVX-25E	4.998.143.738
EVX-T17528	Power transformer for EVX-50E/100E	4.998.143.739
MB-MBK	Mother Board Relays	F.01U.201.677
MB-AMI	Audio Module Interface	F.01U.201.678

MB-FPI	Fire Phone Interface	F.01U.201.679
MB-FPO2	Fire Phone Output Adapter	F.01U.201.680
MB-FO	Fiber Optic Interface Card	F.01U.201.681
EVV-BA100	Backup Audio Interface	F.01U.201.682

**Phone Accessories**

Designator	Description	Part Number
MB-FJ	Telephone Jack	F.01U.201.683
MB-FH	Portable Handset	F.01U.201.684
MB-TC	Fire Phone Cabinet	F.01U.201.685
MB-FS	Fire Phone Station	F.01U.201.686
MB-WS	Warden Station	F.01U.201.687

**Replacement Parts**

Designator	Description	Part Number
MB-DCC	Data Communication Controller	F.01U.201.688
MB-ASC	Audio System Control	F.01U.201.689
MB-MMC	Master Microphone Control	F.01U.201.690
MB-MBR	Mother Board Remote	F.01U.201.691
MB-PWR	Master Panel Power Supply	F.01U.201.692

**Parts included**

Quant.	Component
1	Master or Distributed Panel
1	Literature – Installation Instructions

**Technical specifications**

**Communications Bus**

Communication Type:	RS-485 standard
Data Rate:	1 MB
Frequency:	1.024 MHz
Wire Type:	Twisted pair, Category 5 UTC
Current:	50 mA maximum
Impedance:	120 Ω maximum between panels
Voltage (peak to peak):	5 V maximum

**Electrical (Master Panel)**

Current Draw	
• ASC:	Alarm: 30 mA, Standby: 30 mA
• DCC:	Alarm: 80 mA, Standby: 80 mA
• IOI:	Alarm: 20 mA, Standby: 20 mA
• MMC:	Alarm: 45 mA, Standby: 45 mA

• SLC:	Alarm: 6 mA, Standby: 6 mA
• SSC:	Alarm: 25 mA, Standby: 25 mA
Batteries <sup>1</sup>	
• Type:	Two 12 VDC Gel Cell in series
• Current (battery charging):	800 mA
• Current (input):	Typical Load: 0.28 A Maximum Load: 0.4 A
• Capacity:	Minimum: 24 VDC, 7 Ah Maximum: 24 VDC, 18 Ah
Power	
Input (primary):	120 VAC at 60 Hz
Input current:	0.28 A at 120 VAC
Input (circuits):	all circuits at 24 VDC

<sup>1</sup> Two 7 Ah batteries is the maximum size that will fit in the Master Panel Enclosure which has a battery mounting area (HxWxD) of 4 in. x 14.25 in. x 2.5 in. (101 mm x 362 mm x 64 mm). Larger batteries must be installed in a UL Listed battery enclosure.

**Electrical (Distributed Panel)**

Current Draw	
• AML:	Alarm: 10 mA, Standby: 10 mA
• DCC:	Alarm: 55 mA, Standby: 55 mA
• MBR:	Alarm: 55 mA, Standby: 10 mA
Batteries <sup>2</sup>	
• Type:	Two 12 VDC Gel Cell in series
• Current (battery charging):	Depends on amplifier; EVX-25E/50E: 800 mA maximum EVX-100E: 1 A maximum
• Capacity:	Depends on amplifier; EVX-25E/50E: 24 VDC, 18 Ah maximum EVX-100E: 24 VDC, 24 Ah maximum
Power	
• Input (primary):	120 VAC
• Input current:	Depends on panel configuration.
• Input (circuits):	all circuits at 24 VDC

<sup>2</sup> Two 12 Ah batteries is the maximum size that will fit in the Distributed Panel Enclosure which has a battery mounting area (HxWxD) of 5 in. x 14.25 in. x 4 in. (127 mm x 362 mm x 101 mm). Larger batteries must be installed in a UL Listed battery enclosure.

**Mechanical**

<b>Enclosure</b>	
Color:	Charcoal grey
Dimensions (h x w x d):	27 in x 14.5 in x 4 in (685.8 mm x 368.3 mm x 101.6 mm)

**Ordering information****HMB-MP16 Master Panel**

16 Switch/Input, includes DCC, ASC, SSC, PWR-2A, MMC, 1-SLC, 1-IOI, Swing Door and Cabinet  
Order number **HMB-MP16**

**HMB-DP Distributed Panel, 4 Audio Circuits**

Includes DCC, MBR, AMI, 1-MBK IN Standard Cabinet, no amplifiers in basic assembly  
Order number **HMB-DP**

**HMB-DP/P Distributed Panel, 4 Fire Phone Circuits**

Includes DCC, MBR, 1-FPI, PWR-2A used for phone only systems  
Order number **HMB-DP/P**

**HMB-DP-42 Distributed Panel, 16 Audio Circuits**

Includes DCC, AMI, 2-MBR, 4-MBK, 2-MBI in CAB-42 Cabinet  
Order number **HMB-DP-42**

**Accessories****EVX-25E Expander Module 25 Watt**

Complete module with built-in tone generator capable of operating as a stand-alone Voice Evacuation System with only tone and microphone amplification; power transformer or cabinet not included  
Order number **EVX-25E**

**EVX-50E Expander Module 50 Watt**

Complete module with built-in tone generator capable of operating as a stand-alone Voice Evacuation System with only tone and microphone amplification; power transformer or cabinet not included  
Order number **EVX-50E**

**EVX-100E Expander Module 100 Watt**

Complete module with built-in tone generator capable of operating as a stand-alone Voice Evacuation System with only tone and microphone amplification; power transformer or cabinet not included  
Order number **EVX-100E**

**EVB-BA100 Backup Audio Interface**

Provides a means to switch in a backup amplifier in the event of a primary amp failure  
Order number **EVB-BA100**

**EVX-T2885 Power Transformer for EVX-25E**

Open frame, 28 VAC @ 100 VA  
Order number **EVX-T2885**

**EVX-T17528 Power Transformer for EVX-50E/100E**

Open frame, 28 VAC @ 180 VA  
Order number **EVX-T17528**

**MB-AMI Audio Module Interface**

Controls 2 EVX-25E/50E/100E Expander Modules in Distributed Panels  
Order number **MB-AMI**

**MB-ASC Audio System Control**

Order number **MB-ASC**

**MB-DCC Data Communications Controller**

Order number **MB-DCC**

**MB-FH Portable Handset**

Color red, 6 mount in MB-TC cabinet  
Order number **MB-FH**

**MB-FJ Telephone Jack**

Brushed stainless steel single gang plate  
Order number **MB-FJ**

**MB-FO Fiber Optic Interface Card**

Provides termination for Fiber Optic communications between the Master Panel and the Distributed Panels  
Order number **MB-FO**

**MB-FPI Fire Phone Interface**

Provides 4 supervised Class B Fire Phone circuits in distributed panel (4 max 16 circuits). When more than one is used in a HMB-DP Master Panel a MB-FPO2 Fire Phone Output Adapter is required for each.  
Order number **MB-FPI**

**MB-FPO2 Fire Phone Output Adapter**

Extra terminal card that must be used with the 2nd, 3rd and 4th MB-FPI cards in a Distributed Panel  
Order number **MB-FPO2**

**MB-FS Fire Phone Station**

Coil cord, thumb turn latch, cabinet: red, surface/semi-flush mount  
H x W x D: 12-3/4 x 7 1/4 x 3 3/4 in.  
Order number **MB-FS**

**MB-MBK Mother Board Relays**

Provides 4 Class B speaker loop outputs, a maximum of 2 MB-MBK cards provide 8 Class B or 4 Class A speaker circuits per Distributed Panel  
Order number **MB-MBK**

**MB-MFA Master Fire Phone Assembly**

Master Panel's Fire Phone handset, plate and interface PC board  
Order number **MB-MFA**

**MB-MMC Master Microphone Control**

Order number **MB-MMC**

**MB-MBR Mother Board Remote**

Provides the 4 card slots (can be extended to max 7) for MB-AMI and MB-FPI and 2 MB-MBK  
Order number **MB-MBR**

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**MB-OI Output Interface Card**

Adds 16 outputs to Master Panel  
Order number **MB-OI**

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**MB-PWR Master Panel Power Supply**

Order number **MB-PWR**

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**MB-SLC Switch/LED Card**

16 switches and LEDs for manual control at Master Panel  
Order number **MB-SLC**

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**MB-SSC Switch Scan Card**

Controls up to 8 Switch/LED Cards (128 Switches). Multiple (16) MB-SSC cards can be used for a system capacity of 2048 switches. Field additions or replacement only.  
Order number **MB-SSC**

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**MB-TC Fire Phone Cabinet**

Cabinet: charcoal gray, surface/semi-flush mount, key lock  
H x W x D: 27 x 14-1/2 x 4 in.  
Order number **MB-TC**

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**MB-WS Warden Station**

Cabinet: red, surface/semi-flush mount  
H x W x D: 12-3/4 x 7-1/4 x 3-3/4 in.  
Order number **MB-WS**

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**MB-XI Extended Input Interface**

Adds 16 inputs to Master Panel  
Order number **MB-XI**

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**BATB-40 Battery Box\Enclosure**

The BATB-40 Battery Box holds two dry or wet cell batteries. The box can be used with fire alarm systems or intrusion systems.  
Order number **BATB-40**

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**BATB-SHELF Optional Battery Shelf**

An optional battery shelf for the BATB-40. It allows two additional batteries to be placed in the battery box.  
Order number **BATB-SHELF**

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**BATB-80 Battery Box\Enclosure with Shelf**

The BATB-80 Battery Box holds up to four dry or wet cell batteries. The box can be used with fire alarm systems or with intrusion systems.  
Order number **BATB-80**

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