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Plena Voice Alarm System Overview

Features

- **Complete EN 60849 and EN 54-16 compliancy**
- **Up to 60 zones**
- **Up to eight call stations**
- **One-channel or two-channel operation**
- **Fully supervised system**

The Plena Voice Alarm System is designed for public address and emergency evacuation in small to medium-sized applications such as factories, offices, hotels, shopping malls, supermarkets, sports facilities, schools and universities. All the essential EVAC functionality, such as system supervision, spare amplifier switching, loudspeaker line surveillance, digital message management and a fireman's panel interface is combined with proven audio technology to guarantee excellent speech intelligibility and message delivery. The Plena Voice Alarm System offers extensive possibilities, with emergency call (EMG) and BGM audio channels, up to 60 zones, eight call stations, and two remote control panels. It can function as a one-channel, or as a two call-channel (BGM & call) system. It is compatible with the Plena BGM source units and Plena amplifiers. Bosch can deliver EVAC compliant loudspeakers and accessories for an integrated public address and voice alarm solution.

Functions

The Plena Voice Alarm System is the integrated solution for BGM and EVAC. It complies with the EN 60849 and EN 54-16 standards, including full system supervision, loudspeaker line impedance supervision, a supervised emergency microphone on the front panel and a supervised message manager for up to 255 pre-recorded messages and chimes. The messages can be combined, allowing even more flexible use of prerecorded announcements and evacuation messages. Each message can have any length within the total available capacity of 16 MB. Messages and configurations are uploaded from a PC via USB 2 into the memory, after which the unit operates without a PC connection.

The controller can be used as a stand-alone system with up to six zones, or expanded to up to 60 zones using additional six-zone routers. Up to eight call stations can be connected. Interconnections are made using standard RJ45 connectors and (shielded) CAT-5 cable.

With a maximum of 1000 W per router, the audio output uses standard analog audio 100 V line switching for full compatibility with the Plena family of public address equipment and Bosch EVAC-compliant loudspeakers. The system is configured using DIP switches for basic functionality, and a PC for more advanced functions. Up to 18 priority levels can be specified for optimum system flexibility.

Six zones can be selected on each call station, and call station keypads can be connected to increase the number of selectable zones or zone groups.

The controller and each connected router have 12 trigger inputs to start business and emergency messages. Each can be configured for a message consisting of a sequence of up to eight wave files. In this way some wave files may be used in different combinations with other messages, optimizing flexibility and used storage space. Together with this sequence, a zone selection can be configured for each trigger input.

Certifications and Approvals

Emergency	acc. to EN 54-16 / EN 60849

Technical Specifications

Maximum total cable length between the controller and the last router in the chain	1000 m
Maximum total cable length between the controller and the last call station in the chain	1000 m
Maximum total cable length between the controller and the RC panel	1000 m
PC connection for system configuration	USB 2.0
Maximum power consumption per router	1000 W
Interconnections	CAT-5
Maximum number of zones supported	60
Maximum number of call station supported	8
Maximum number of key pads per call station	8
Maximum number of messages	255

LBB 1990/00 Plena Voice Alarm Controller

Features

- **Heart of the Plena Voice Alarm System**
- **Six-zone system controller**
- **Built-in 240 W amplifier**
- **12 business and emergency control inputs**
- **EN 54-16 and EN 60849 compliant**

The Plena Voice Alarm Controller is the heart of the voice alarm system. It is the basis of the Plena Voice Alarm System, and has all the essential functionality for compliance with the EN 60849 and 54-16 standards, including full system supervision, loudspeaker line impedance supervision, a supervised emergency microphone on the front panel and a supervised message manager.

The messages can be merged to allow even more flexible use of pre-recorded announcements and evacuation messages. The controller can be used as a stand-alone system with up to six zones, or expanded to up to 60 zones using additional six-zone routers. Up to eight call stations can be connected. Interconnections are made using standard RJ45 connectors and shielded CAT-5 cable.

A built-in 240 W amplifier provides the power for the emergency call channel and BGM. Additional Plena Amplifiers can be added to provide two-channel operation. All amplifiers are supervised. The audio output uses standard analog audio 100 V line switching for full compatibility with the Plena family of public address equipment and Bosch EVAC-compliant loudspeakers. The system is configured using DIP switches for basic functionality and a PC for more advanced functions.

Functions

The controller has two BGM source inputs and a mic/line input with configurable priority, speech filter, phantom power and selectable VOX activation. A total of 16 priority levels can be specified for microphone, call stations and trigger inputs for optimum system flexibility.

The powerful 240 W output section has six transformer-isolated 100 V constant-voltage outputs for driving 100 V loudspeakers in six separate zones. The 100 V-technique reduces line losses on longer distances and provides easy parallel connection of multiple loudspeakers. All zones may be individually selected from the front panel, and the BGM output level in each zone can be individually set in six steps. The controller supports A/B wiring.

Configuration software is provided on the CD included with the unit. The CD also includes many useful programs, such as MP3-ripping software, a sample-rate converter, various audio and visual tools, and free, MP3-coded music.

The amplifier output is also available as a separate output on 100 V and 70 V. A separate 100 V call-only output provides addressing for an area where BGM is not required but where priority announcements are. Six configurable volume-override output contacts are available for overriding local volume controls during priority calls. Both four-wire and three-wire schemes are supported. An LED meter monitors the output.

Up to 255 messages can be stored in the internal 16 MB flash ROM, without a need for battery backup. Each message can have any length within the total available capacity. Messages and configurations are uploaded from a PC via USB 2 into the memory, after which the unit operates without a PC connection. The standard WAV-format is used for the messages, and sample rates of 8 kHz up to 24 kHz with 16-bit word length (linear PCM) are supported. This gives up to 17 minutes of recording time with CD-quality signal-to-noise ratio.

The unit has 12 contact trigger inputs for business and emergency (EMG) calls. Each can be configured for a message consisting of a sequence of up to eight wave files. In this way some wave files may be used in various combinations with other messages, optimizing flexibility and the amount of storage space used . Multiple messages can be merged to form one integrated message. A zone selection, together with this sequence can be configured for each trigger input.

Controls and indicators

Front

- LED power meter
- 13 system fault LEDs
- Two fault state buttons
- Two emergency state buttons
- Six EMG zone status LED pairs
- Six EMG zone select buttons
- Six BGM zone select LEDs
- Six BGM zone select buttons

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- Six BGM zone volume control knobs
- Two BGM source status LEDs
- Three knobs for BGM volume, treble, and bass levels
- All-call button
- Indicator test button
- EMG state button
- Alert message button

Back

- Three service settings DIP switches
- Calibration switch
- Four system configuration DIP switches
- Mains voltage selector
- Power switch
- Power cord socket
- Mic/line level switch
- Three DIP switches for VOX, speech, phantom power
- Microphone volume control knob
- Digital message volume control screw
- Monitoring speaker volume control knob

Interconnections

Front

- Microphone socket

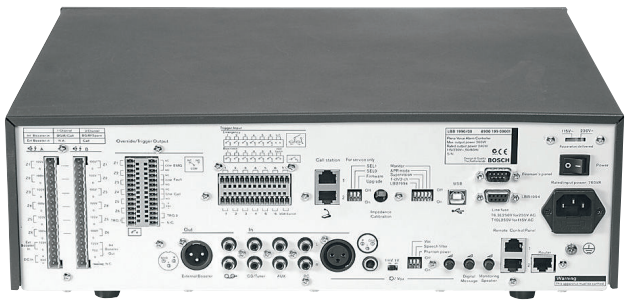
Back

- 12 loudspeaker outputs
- External amplifier input
- Amplifier output (on 100 V)
- Backup power input
- Call output
- Six volume override outputs
- Three status outputs
- 12 trigger inputs
- 24 VDC output
- Two call station connectors (redundant)
- USB 2 connector
- Two DE-9 connectors (reserved)
- External amplifier output
- Line output connectors
- Two BGM inputs
- PC call station input (reserved)
- Two RC station connectors (redundant)
- Connector to LBB 1992/00 (router)

Certifications and Approvals

Region	Certification	
Europe	CE	Declaration of Conformity
Poland	CNBOP	
Safety		acc. to EN 60065
Immunity		acc. to EN 55103-2
Emission		acc. to EN 55103-1
Emergency		acc. to EN 54-16 / EN 60849

Installation/Configuration Notes



LBB 1990/00 rear view

Parts Included

Quantity	Component
1	LBB 1990/00 Plena Voice Alarm Controller
1	Power cord
1	Set of 19” mounting brackets
1	Plena VAS CD
1	Installation and User Instructions
1	USB cable

Technical Specifications

Electrical

Mains power supply	
Voltage	230/115VAC, ±15%, 50/60 Hz
Current inrush	8 A
Max power consumption	600 VA
Battery power supply	
Voltage	24 VDC, +15% / -15%
Current max	14 A
Performance	
Output power (rms/maximum)	240 W / 360 W
Power reduction on backup power	-1 dB
Frequency response	60 Hz to 18 kHz (+1/-3 dB at -10 dB ref. rated output)
Distortion	<1% at rated output power, 1 kHz
Bass control	-8/+8 dB at 100 Hz
Treble control	-8/+8 dB at 10 kHz
Mic/line input	1 x
Connector	XLR, 6.3 mm jack
Sensitivity	1 mV (mic), 1 V (line)
Impedance	>1 kohm (mic); >5 kohm (line)
S/N (flat at max volume)	>63 dB (mic); >70 dB (line)
S/N (flat at min volme/muted)	>75 dB
CMRR	>40 dB (50 Hz – 20 kHz)
Headroom	>25 dB

Mains power supply	
Speech filter	-3 dB at 315 Hz, high-pass, 6 dB/oct
Phantom power supply	12 V (mic mode only)
VOX trigger level	-20 dB (100 µV mic / 100 mV line) or via input contact
Limiter	Automatic
Line input	(BGM and PC call station)
Connector	Cinch, stereo converted to mono, unbalanced
Sensitivity	200 mV
Impedance	22 kohm
S/N (flat at max volume)	>70 dB
S/N (flat at min volume/muted)	>75 dB
Headroom	>25 dB
Trigger Inputs	12 x (6 EMG, 6 business)
Connectors	MC1,5 / 14-ST-3,5
Activation	Programmable
Supervision	On EMG inputs, programmable
Supervision method	Series / parallel resistor
100 V input	
Connector	MSTB 2,5 /16-ST
Power handling capacity	1000 W
Tape output	1 x
Connector	Cinch, 2 x mono
Nominal level	350 mV
Impedance	<1 kohm
Loudspeaker outputs	
Connectors	MSTB 2,5 /16-ST, floating
100 V output	700 W rated per zone
Volume override types	3-wire, 4-wire (24 V), 4-wire failsafe
BGM zone output Attenuation	70 / 50 /35 /25 / 18 / 13 V for 0 / -3 / -6 / -9 / -12 / -15 dB 120 / 60 / 30 / 15 / 8 /4 W
Output Contacts	
Connector Type	MC 1,5/14-ST-3,5
Rating	250 V, 7A, voltage free
Emergency active relay	NO / COM / NC
Call active relay	NO / COM / NC
Fault relay	NO / COM / NC normally energized (failsafe)
General purpose relays	NO / COM

Power consumption

Mains operation	
Max power	550 W
-3dB	440 W
-6dB	340 W
Pilot tone*	136 W
Idle	60 W
24 VDC operation	
Max power	14.0 A (336 W)
Mains operation	
-3 dB	12.5 A (300 W)
-6 dB	9.5 A (228 W)
Pilot tone*	2.5 A (60 W)
Idle	0.9 A (22 W)

** 20 kHz -20dB with maximum loudspeaker load*

Messages

Data format	WAV-file, 16-bit PCM, mono
Supported sample rates (fs)	24 / 22.05 / 16 / 12 / 11.025 / 8 kHz
Frequency response	
at fs=24kHz	100 Hz to 11 kHz (+1/-3 dB)
at fs=22.05kHz	100 Hz to 10 kHz (+1/-3 dB)
at fs=16kHz	100 Hz to 7.3 kHz (+1/-3 dB)
at fs=12kHz	100 Hz to 5.5 kHz (+1/-3 dB)
at fs=11.025kHz	100 Hz to 5 kHz (+1/-3 dB)
at fs=8kHz	100 Hz to 3.6 kHz (+1/-3 dB)
Distortion	<0.1% at 1 kHz
S/N (flat at max volume)	>80 dB
Memory capacity	16 MB Flash ROM
Recording / playback time	1000 seconds at fs = 8 kHz 333 seconds at fs = 24 kHz
Number of messages	255 max
Supervision Flash ROM	Continuous checksum control
Supervision DAC	1 Hz pilot tone
Data retention time	>10 years

Mechanical

Dimensions (H x W x D)	144 x 430 x 370 mm (19" wide, 3U high)
Weight	Approx. 21.17 kg
Mounting	19”rack
Color	Charcoal

Environmental

Operating temperature	-10 ºC to +55 ºC (14 ºF to +131 ºF)
Storage temperature	-40 ºC to +70 ºC (-40 ºF to +158 ºF)
Relative humidity	<95%
Acoustic noise level of fan	<48 dB SPL at 1 m (max output)

Ordering Information

LBB 1990/00 Plena Voice Alarm Controller fully supervised main control unit for Voice Alarm applications. Built-in 240 W amplifier.	**LBB1990/00**
Accessories	
PLN-VASLB-NL Plena VAS labels, Dutch (10 pcs) Dutch, set of 10 pieces, and can be placed on the front panel	**PLN-VASLB-NL**
PLN-VASLB-DE Plena VAS labels, German (10 pcs) German, set of 10 pieces, and can be placed on the front panel	**PLN-VASLB-DE**
PLN-VASLB-FR Plena VAS labels, French (10 pcs) French, set of 10 pieces, and can be placed on the front panel	**PLN-VASLB-FR**
PLN-VASLB-SE Plena VAS labels, Swedish (10 pcs) Swedish, set of 10 pieces, and can be placed on the front panel	**PLN-VASLB-SE**
PLN-VASLB-PL Plena VAS labels, Polish (10 pcs) Polish, set of 10 pieces, and can be placed on the front panel	**PLN-VASLB-PL**

LBB 1992/00 Plena Voice Alarm Router

Features

- **Six-zone router with single or dual channel operation**
- **Six EMG input contacts**
- **Six business input contacts**
- **Six volume override output contacts**
- **Supervision within the Plena Voice Alarm System**
- **EN 54-16 and EN 60849 compliant**

The Plena Voice Alarm Router is an expansion unit that can add six zones as well as 12 input and eight output contacts to the Voice Alarm System. It can use the built-in amplifier on the LBB 1990/00 Voice Alarm Controller, and provides inputs and outputs for one or two amplifiers in a multi-amplifier one or two-channel system.

It provides dual channel operation for calls and BGM simultaneously to a maximum of six different zones, using two Plena amplifiers. Additionally, single channel operation is possible with only one Plena amplifier.

Multiple routers can also share one amplifier, including the internal amplifier on the controller unit. It is possible to use any number of amplifiers from one up to the number of routers used. The controller supports A/B wiring.

Functions

The LBB 1992/00 has a set of relays for zone-switching the power amplifier output(s) to different loudspeaker groups. Each zone can be switched between:

- The call channel (call-station selection, all-call microphone, or emergency activation)
- The BGM channel (front panel selection)
- Off

Volume override relay contacts are provided for each zone separately for overriding local loudspeaker volume controls. This ensures that priority messages go through with a given volume, even though the local volume controls may be set to a low volume level for background music, for example. Both three-wire and four-wire override schemes are supported. A call or a triggered input will activate these contacts for the appropriate zones, together with an additional voltage-free contact (call-active) for control purposes.

An overload protected 24 VDC output provides power for driving external relays, making an external power supply unnecessary. The master output channel, or one of the input channels, can be selected to be monitored with headphone connector and LED meter.

Controls and indicators

Front

- Meter (LED's for -20, -6, 0 dB and Power ON)
- Eight system fault LEDs
- 12 loudspeaker line fault LEDs
- Six EMG call-zone selection buttons
- 12 EMG call-zone status LEDs
- Six BMG zone selector buttons
- Six BMG zone status LEDs

Back

- 2 x DIP switch
- Unit ID rotary control
- Mains voltage selector
- Power switch
- Mains socket

Interconnections

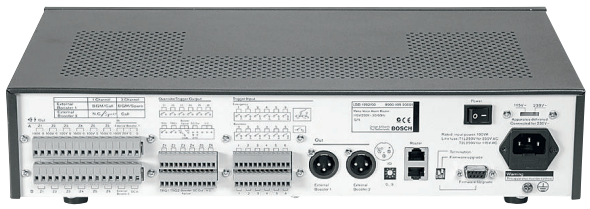
Back

- 12 loudspeaker outputs
- Two external amp inputs
- Call output
- Six volume override outputs
- 12 trigger inputs
- RS-232 connector
- Two system interlinks
- Two external amp outputs (XLR/balanced)
- Power amp fault output
- 24 VDC power output
- 24 VDC power input
- Two extra trigger outputs
- Earth connection screw

Certifications and Approvals

Region	Certification	
Europe	CE	Declaration of Conformity
Poland	CNBOP	
Safety		acc. to EN 60065
Immunity		acc. to EN 55103-2
Emission		acc. to EN 55103-1
Emergency		acc. to EN 54-16 / EN 60849

Installation/Configuration Notes



LBB 1992/00 rear view

Parts Included

Quantity	Component
1	LBB 1992/00 Plena Voice Alarm Router
1	Power cord
1	Set of 19” mounting brackets
1	Plena CD
1	Installation and User Instructions
1	XLR cable
1	Ethernet cable

Technical Specifications

Electrical	
Mains power supply	
Voltage	230/115 VAC, ±10%, 50/60 Hz
Inrush current	1.5 A @ 230 VAC / 3 A @ 115 VAC
Max power consumption	50 VA
Idle / max load* current	0.2 A / 0.3 A
Battery power supply	
Voltage	24 VDC, +15% / -15%
Current max	1.8 A
Typical / max load* current	0.51 A / 1.5 A
Trigger Inputs	12 x (6 EMG, 6 business)
Connectors	MC1,5 / 14-ST-3,5
Activation	Programmable
Supervision	On EMG inputs, programmable
Supervision method	Series / parallel resistor
100 V input	
Connector	MSTB 2,5 /16-ST
Amp 1	100 V / 70 V / 0 V
Amp 2	100 V / 0 V
Power handling capacity	1000 W
Loudspeaker outputs	12 x (2 x 6 zones)
Connectors	MSTB 2,5 /16-ST, floating
100 V output	700 W rated per zone
Volume override types	3-wire, 4-wire (24 V), 4-wire failsafe
Output Contacts	
Connector	MC 1,5/14-ST-3,5
Mains power supply	
Rating	250 V, 7A, voltage free
General purpose relays (2x)	NO / COM

** Maximum load means maximum load on 24 VDC, and indicator test.*

Mechanical	
Dimensions (H x W x D)	88 x 430 x 260 mm (19" wide, 2U high)
Weight	Approx. 3 kg
Mounting	Standalone, 19” rack
Color	Charcoal
Environmental	
Operating temperature	-10 ºC to +55 ºC (14 ºF to +131 ºF)
Storage temperature	-40 ºC to +70 ºC (-40 ºF to +158 ºF)
Relative humidity	<95%

Ordering Information

LBB 1992/00 Plena Voice Alarm Router add six zones as well as 12 input and eight output contacts to the Voice Alarm System.	**LBB1992/00**
Accessories	
PLN-VASLB-NL Plena VAS labels, Dutch (10 pcs) Dutch, set of 10 pieces, and can be placed on the front panel	**PLN-VASLB-NL**
PLN-VASLB-DE Plena VAS labels, German (10 pcs) German, set of 10 pieces, and can be placed on the front panel	**PLN-VASLB-DE**
PLN-VASLB-FR Plena VAS labels, French (10 pcs) French, set of 10 pieces, and can be placed on the front panel	**PLN-VASLB-FR**
PLN-VASLB-SE Plena VAS labels, Swedish (10 pcs) Swedish, set of 10 pieces, and can be placed on the front panel	**PLN-VASLB-SE**
PLN-VASLB-PL Plena VAS labels, Polish (10 pcs) Polish, set of 10 pieces, and can be placed on the front panel	**PLN-VASLB-PL**

LBB 1956/00 Plena Voice Alarm Call Station

Features

- **Stylish six-zone call station for the Plena Voice Alarm System**
- **Six zone selection keys, all-call key and momentary PTT-key for calls**
- **Selectable gain, speech filter, limiter, and output level for improved intelligibility**
- **LED indications for zone selection, fault, and emergency state**
- **Call station extension provides seven additional zone and zone group keys**

The Plena call station is a stylish, high-quality call station with a stable metal base design, a flexible microphone stem and a unidirectional condenser microphone. It can make calls to selected zones (one to six and all-call) in a public address system built with the Plena Voice Alarm System. In addition to tabletop use, the special design allows it to be neatly flush-mounted in desktops. The Plena Voice Alarm Keypad (LBB 1957/00) is an extension adding seven additional keys.

Functions

Each call station supports six zone selections. The number of selectable zones or zone groups can be increased by connecting call station keypads (LBB 1957/00). Up to eight keypads can be added with each keypad adding seven zone or zone-group keys.

This call station features selectable gain, a selectable speech filter, and a limiter for improved intelligibility. The call station has a balanced line level output, making it possible to position it up to 1000 meters from the controller, using CAT-5 extension cables. With shielded cable, the call station can also be used in an EMC level 5 (heavy industry) environment.

DIP switches at the base of the call station select different microphone gain levels, the call station ID, and the speech filter. A service accessible rotary control provides microphone level attenuation. LEDs on the call station show which zones have been selected. Three additional LEDs give visible feedback on the active state of the microphone and the system. Green flashing means standby (chime is sounding). Green indicates microphone active. Amber indicates that the system has detected a fault, and red indicates that the system is in the emergency state.

Controls and indicators

- Four status LEDs
- PTT-key
- PTT status LED
- Six zone selection keys
- Six zone selection LEDs
- All-call key
- Eight DIP switches
- Rotary volume control

Interconnections

- Two RJ45 jacks
- 24 VDC input
- Keypad connector

Certifications and Approvals

Region	Certification	
Europe	CE	Declaration of Conformity
Safety		acc. to EN 60065
Immunity		acc. to EN 55103-2
Emission		acc. to EN 55103-1

Parts Included

Quantity	Components
1	LBB 1956/00 Plena Voice Alarm Call Station
1	Cable terminated with a lockable CAT-5 connector

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Technical Specifications

Electrical

Power Supply	
Voltage range	24 VDC supplied by LBB 1990/00 (or 18 to 24 VDC or VAC external power supply)
Current consumption	<30 mA (plus <15 mA per keypad)
Performance	
Nominal sensitivity	85 dB SPL (gain preset 0 dB)
Nominal output level	700 mV
Input sound level (max)	110 dB SPL
Gain preset	+6 / 0 / -15 dB
Limiter threshold	2 V
Compression ratio limiter	1:20
Distortion	<0.6% (maximum input)
Input noise level (equiv.)	25 dB SPLA
Frequency response	100 Hz to 16 kHz
Speech filter	-3dB at 315 Hz, high-pass, 6 dB/oct
Output impedance	200 ohm
Selections	
Chimes	Any wave file
Priorities	7

Mechanical

Base dimensions	40 x 100 x 235 mm (1.57 x 3.97 x 9.25 in)
Weight	Approx. 1 kg
Mounting	Standalone
Color	Charcoal with silver
Stem length with mic	390 mm (15.35 in)
Cable length	5 m (16.4 ft)

Environmental

Operating temperature	-10 ºC to +45 ºC (14 ºF to +113 ºF)
Storage temperature	-40 ºC to +70 ºC (-40 ºF to +158 ºF)
Relative humidity	<95%

Ordering Information

LBB 1956/00 Plena Voice Alarm Call Station metal base design, a flexible microphone stem and a unidirectional condenser microphone. It can make calls to selected zones (one to six and all-call)	**LBB1956/00**

LBB 1957/00 Plena Voice Alarm Keypad

Features

- **Seven zone selection keys**
- **LED indications for zone selection**
- **Up to eight keypads can be connected together**
- **EN 60849 compliant**

The keypad is an extension to the LBB 1956/00 Plena Voice Alarm Call Station that adds seven additional zone-select keys. It has the same stable metal base as the call station. In addition to tabletop use, the special design allows it to be neatly flush-mounted in desktops.

Functions

Each call station supports six zone selections. Connecting one of these units, adds seven zones or zone groups that can be selected. Up to eight keypads can be added to an LBB 1956/00 call station. LEDs on the keypad indicate the active zones.

Controls and indicators

- Seven zone selection keys
- Seven zone selection LEDs
- Eight DIP switches

Interconnections

- Two RJ45 jacks
- 24 VDC input
- Keypad connector

Certifications and Approvals

Region	Certification	
Europe	CE	Declaration of Conformity
Safety	acc. to EN 60065	
Immunity	acc. to EN 55103-2	
Emission	acc. to EN 55103-1	
Emergency	acc. to EN 60849	

Technical Specifications

Electrical

Power Supply

Voltage range	24 VDC supplied by LBB 1956/00
Current consumption	<15 mA

Mechanical

Base dimensions	40 x 100 x 235 mm (1.57 x 3.97 x 9.25 in)
Weight	Approx. 1 kg
Mounting	Bracket coupled with LBB 1956/00 or other LBB 1957/00
Color	Charcoal with silver

Environmental

Operating temperature	-10 ºC to +45 ºC (14 ºF to +113 ºF)
Storage temperature	-40 ºC to +70 ºC (-40 ºF to +158 ºF)
Relative humidity	<95%

Ordering Information

LBB 1957/00 Plena Voice Alarm Keypad an extension to the LBB 1956/00 Plena Voice Alarm Call Station that adds seven additional zone-select keys	**LBB1957/00**

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LBB 1995/00 Plena Voice Alarm System Fireman's panel

Features

- **Remote control of the voice alarm system**
- **Large buttons designed for gloved hands**
- **Emergency (EMG) microphone**
- **EMG state and fault indicators**
- **Call monitoring loudspeaker**
- **Control outputs for EMG and fault state**
- **EN 54-16 and EN 60849 compliant**

The Plena voice alarm remote control panels allow the system to be controlled remotely from one or two remote locations. There are five models available:

- The fireman's panel, which has oversized, illuminated controls and an all-call function
- The main RC unit, which duplicates the front panel of the Voice Alarm Controller
- The RC extension, which duplicates the front panel of the router
- The main RC kit
- The RC extension kit

The kits are a functional match to the remote control and the RC extension, with connectors on the front panel instead of controls and indicators.

Functions

The fireman’s panel is a remote control that has specialized buttons and indicators for firemen. The remote control has no zone selection, as the standard RC has, but large backlit buttons.

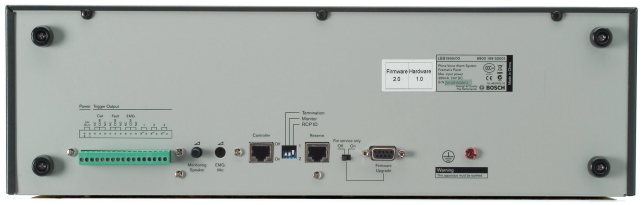
It is possible to enter or acknowledge the emergency state, and acknowledge and reset the fault state. Emergency or alert messages can be started, and live calls can be made.

An LED meter shows the presence and level of the calls that are active in the system. The fault indicators show detailed information of a fault in the system. Connection to the Plena Voice Alarm System is via standard, shielded CAT-5 cable and RJ45 connectors. The included rack mounting brackets can also be used to mount the units to a rear wall with spacing for cables, and even to a flat surface above or below the unit.

Certifications and Approvals

Region	Certification	
Europe	CE	Declaration of Conformity
Poland	CNBOP	
Safety		acc. to EN 60065
Immunity		acc. to EN 55103-2
Emission		acc. to EN 55103-1
Emergency		acc. to EN 54-16 / EN 60849

Installation/Configuration Notes



LBB 1995/00 rear view

Parts Included

Quantity	Component
1	LBB 1995/00 Plena Voice Alarm System Fireman's panel
1	Set of 19” mounting brackets
1	EMG microphone and cable
1	EMG mic mounting clip
1	1 m CAT-5 cable

Technical Specifications

Electrical*

Power supply	
Voltage	24 VDC, +20% / -10%
Current typical	100 mA
Current max (indicator test)	250 mA
Priority relay contacts	30 V, 1 A
Emergency relay contacts	30 V, 1 A

** Technical performance data acc. to IEC 60268-3*

Mechanical

Dimensions	134 x 430 x 90 mm (19" wide, 3U high)
Weight	Approx. 3 kg
Mounting	19” rack or wall
Color	Charcoal

Environmental

Operating temperature	-10 ºC to +55 ºC (14 ºF to +131 ºF)
Storage temperature	-40 ºC to +70 ºC (-40 ºF to +158 ºF)
Relative humidity	<95%

Ordering Information

LBB 1995/00 Plena Voice Alarm System Fireman's panel all-call EVAC remote control with microphone	**LBB1995/00**
Accessories	
PLN-VASLB-NL Plena VAS labels, Dutch (10 pcs) Dutch, set of 10 pieces, and can be placed on the front panel	**PLN-VASLB-NL**
PLN-VASLB-DE Plena VAS labels, German (10 pcs) German, set of 10 pieces, and can be placed on the front panel	**PLN-VASLB-DE**
PLN-VASLB-FR Plena VAS labels, French (10 pcs) French, set of 10 pieces, and can be placed on the front panel	**PLN-VASLB-FR**
PLN-VASLB-SE Plena VAS labels, Swedish (10 pcs) Swedish, set of 10 pieces, and can be placed on the front panel	**PLN-VASLB-SE**
PLN-VASLB-PL Plena VAS labels, Polish (10 pcs) Polish, set of 10 pieces, and can be placed on the front panel	**PLN-VASLB-PL**

1

LBB 1996/00 Plena Voice Alarm Remote Control

Features

- **Remote control of the voice alarm system**
- **Emergency (EMG) microphone**
- **EMG and background (BGM) zone selections**
- **EMG state and fault indicators**
- **Control outputs for EMG and fault states**
- **Call monitoring loudspeaker**
- **EN 54-16 and EN 60849 compliant**

The Plena voice alarm remote control panels allow the system to be controlled remotely from one or two remote locations. There are five models available:

- The fireman's panel, which has oversized, illuminated controls and an all-call function
- The main RC unit, which duplicates the front panel of the Voice Alarm Controller
- The RC extension, which duplicates the front panel of the router
- The main RC kit
- The RC extension kit

The kits are a functional match to the remote control and the RC extension, with connectors on the front panel instead of controls and indicators.

Functions

The remote control is an exact duplicate of the control panel on the LLB 1990/00 Plena Voice Alarm System Controller. The LBB 1996/00 provides all EVAC control from one or two locations, such as at entrance points. The remote control has BGM and emergency-call zone selection without source, volume or tone control.

It is possible to enter or acknowledge the emergency state, and acknowledge and reset the fault state. Emergency or alert messages can be started, and live calls can be made.

An LED meter shows the presence and level of the calls that are running in the system. The fault indicators reflect any faults present in the system. The unit connects to the Plena Voice Alarm System via standard shielded CAT 5 cable. The included rack mounting brackets can also mount the unit on a wall with spacing for cables at the back, as well as to a horizontal surface above or below the unit.

Certifications and Approvals

Region	Certification	
Europe	CE	Declaration of Conformity
Poland	CNBOP	
Safety		acc. to EN 60065
Immunity		acc. to EN 55103-2
Emission		acc. to EN 55103-1
Emergency		acc. to EN 54-16 / EN 60849

Installation/Configuration Notes

LBB 1996/00 rear view

Parts Included

Quantity	Component
1	LBB 1996/00 Plena Voice Alarm System Remote Control
1	Set of 19” mounting brackets
1	EMG microphone and cable
1	EMG microphone mounting clip
1	1 m CAT 5 cable

Technical Specifications

Electrical

Power supply	
Voltage	24 VDC, +15% / -15%
Current typical	100 mA
Current max (indicator test)	250 mA
Relay contacts	30 V, 1 A

Mechanical

Dimensions (H x W x D)	134 x 430 x 90 mm (19" wide, 3U high)
Weight	Approx. 3 kg
Mounting	19” rack or wall
Color	Charcoal

Environmental

Operating temperature	-10 ºC to +55 ºC (14 ºF to +131 ºF)
Storage temperature	-40 ºC to +70 ºC (-40 ºF to +158 ºF)
Relative humidity	<95%

Ordering Information

LBB 1996/00 Plena Voice Alarm Remote Control **LBB1996/00**
six-zone voice alarm remote control with microphone

1

LBB 1997/00 Plena Voice Alarm System Remote Control Extension

Features

- **Remote control of the voice alarm routers**
- **EMG and background (BGM) zone selections**
- **EMG state and fault indicators**
- **One extension per router**
- **Power supply from the remote control panel (kit)**
- **EN 54-16 and EN 60849 compliant**

The Plena voice alarm remote control panels allow the system to be controlled remotely from one or two remote locations. There are five models available:

- The fireman's panel, which has oversized, illuminated controls and an all-call function
- The main RC unit, which duplicates the front panel of the Voice Alarm Controller
- The RC extension, which duplicates the front panel of the router
- The main RC kit
- The RC extension kit

The kits are a functional match to the remote control and the RC extension, with connectors on the front panel instead of controls and indicators.

Functions

The extension duplicates the Plena LBB 1992/00 Voice Alarm Router front panel. One extension is needed per router, but not all routers need to have a remote control.

An LED meter shows the presence and level of the calls that are running in the system. The fault indicators show detailed information of any faults present in the system. The unit connects to the Plena Voice Alarm System via standard shielded CAT 5 cable. The included rack mounting brackets can also mount the unit on a wall with spacing for cables at the back, as well as to a horizontal surface above or below the unit.

One or more extensions need to be connected to a voice alarm RC or voice alarm RC kit.

Certifications and Approvals

Region	Certification	
Europe	CE	Declaration of Conformity
Poland	CNBOP	
Safety		acc. to EN 60065
Immunity		acc. to EN 55103-2
Emission		acc. to EN 55103-1
Emergency		acc. to EN 54-16 / EN 60849

Installation/Configuration Notes

LBB 1997/00 rear view

Parts Included

Quantity	Component
1	LBB 1997/00 Plena Voice Alarm System Remote Control Extension
1	Set of 19” mounting brackets
1	1 m CAT 5 cable

Technical Specifications

Electrical*

Power supply	
Voltage	24 VDC, +15% / -15%
Current typical	50 mA
Current max (indicator test)	200 mA (indicator test)
Relay contacts	30 V, 1 A

** Technical performance data according to IEC 60268-3*

Mechanical

Dimensions (H x W x D)	88 x 430 x 90 mm (19 in wide, 2U high)
Weight	Approx. 2 kg
Mounting	Stand-alone, 19” rack
Color	Charcoal

Environmental

Operating temperature	-10 ºC to +55 ºC (14 ºF to +131 ºF)
Storage temperature	-40 ºC to +70 ºC (-40 ºF to +158 ºF)
Relative humidity	<95%

Ordering Information

LBB 1997/00 Plena Voice Alarm System Remote Control Extension **LBB1997/00**
six-zone voice alarm router remote control

1

LBB 1998/00 Plena Voice Alarm System Remote Kit

Features

- **Remote control of the Voice Alarm Controller**
- **Emergency (EMG) microphone**
- **EMG and background (BGM) zone selections**
- **EMG state and fault indicators**
- **Control outputs for EMG and Fault state**
- **Front panel zone selection for BGM and call station zone selection for calls**
- **EN 60849 compliant**

The Plena voice alarm remote control panels allow the system to be controlled remotely from one or two remote locations. There are five models available:

- The fireman's panel, which has oversized, illuminated controls and an all-call function
- The main RC unit, which duplicates the front panel of the Voice Alarm Controller
- The RC extension, which duplicates the front panel of the router
- The main RC kit
- The RC extension kit

The kits are a functional match to the remote control and the RC extension, with connectors on the front panel instead of controls and indicators.

Functions

The kit is a functional match to the LBB 1996, which duplicates the voice alarm controller. All controls and indicators are available on screw terminals. The remote control kit has BGM zone selection without source selection, volume or tone control.

These kits make it easy to build a custom control unit. The electrical connections are printed on the front and rear panels. A 24 VDC output is available to supply power to external LEDs and relays, so an external power supply is not required for that purpose.

The remote control kit functions on an external 24 V power supply. The interconnecting CAT 5 (shielded) cable provides power for the RC extension and extension kit.

After connecting all indicators the following functions are available:

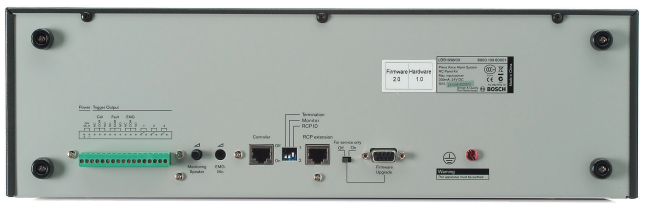
- The LED meter shows the presence and level of the calls that are running in the system
- The fault indicators show detailed information of a fault in the system

The connection to the Bosch Voice Alarm System is via standard, shielded CAT 5 cable and RJ45 connectors. The included rack mounting brackets can also be used to mount the units to a rear wall with spacing for cables, and even to a flat surface above or below the units.

Certifications and Approvals

Region	Certification	
Europe	CE	Declaration of Conformity
Safety		acc. to EN 60065
Immunity		acc. to EN 55103-2
Emission		acc. to EN 55103-1
Emergency		acc. to EN 60849

Installation/Configuration Notes



LBB 1998/00 rear view

Parts Included

Quantity	Component
1	LBB 1998/00 Plena Voice Alarm System Remote Kit
1	Set of 19” mounting brackets
1	EMG microphone and cable
1	EMG microphone mounting clip
1	1 m CAT 5 cable

Technical Specifications

Electrical*

Power supply	
Voltage	24 VDC, -15% / +15%
Current typical	100 mA
Current max (indicator test)	250 mA
Priority relay contacts	30 V, 1 A
Emergency relay contacts	30 V, 1 A
DC supply output	24 V, 200 mA (max)
LEDs / lamps	
On external power	50 V (200 mA max)
On internal power	5 mA max
Type	Open collector pull down

** Technical performance data acc. to IEC 60268-3*

Mechanical

Dimensions	134 x 430 x 90 mm (19" wide, 3U high)
Weight	Approx. 3 kg
Mounting	Stand-alone, 19” rack
Color	Charcoal

Environmental

Operating temperature	-10 ºC to +55 ºC (14 ºF to +131 ºF)
Storage temperature	-40 ºC to +70 ºC (-40 ºF to +158 ºF)
Relative humidity	<95%

Ordering Information

LBB 1998/00 Plena Voice Alarm System Remote Kit **LBB1998/00**
kit for six-zone voice alarm controller remote control

1

LBB 1999/00 Plena Voice Alarm System Remote Control Extension Kit

Features

- **Remote control of voice alarm routers**
- **Connectors with screw terminals**
- **EMG and background (BGM) zone selections**
- **Fault indicators**
- **Open collector terminals for LEDs or lamps**
- **EN 60849 compliant**

The Plena voice alarm remote control panels allow the system to be controlled remotely from one or two remote locations. There are five models available:

- The fireman's panel, which has oversized, illuminated controls and an all-call function
- The main RC unit, which duplicates the front panel of the Voice Alarm Controller
- The RC extension, which duplicates the front panel of the router
- The main RC kit
- The RC extension kit

The kits are a functional match to the remote control and the RC extension, with connectors on the front panel instead of controls and indicators.

Functions

The kit is a functional match to the LBB 1997/00, which duplicates the voice alarm router. All controls and indicators are available on screw terminals.

These kits make it easy to build a custom control unit. The electrical connections are printed on the front and rear panels. A 24 VDC output is available to supply power to external LEDs and relays, so an external power supply is not required for that purpose.

The remote control kit functions on an external 24 V power supply. The interconnecting CAT 5 (shielded) cable provides power for the RC extension and extension kit.

After connecting all indicators the following functions are available:

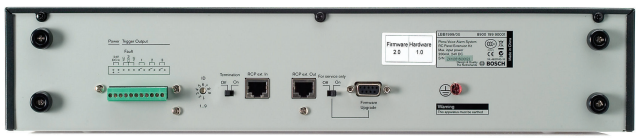
- The LED meter shows the presence and level of the calls that are running in the system
- The fault indicators show detailed information of a fault in the system

The connection to the Bosch Voice Alarm System is via standard, shielded CAT-5 cable and RJ45 connectors. The included rack mounting brackets can also be used to mount the units to a rear wall with spacing for cables, and even to a flat surface above or below the units.

Certifications and Approvals

Region	Certification	
Europe	CE	Declaration of Conformity
Safety		acc. to EN 60065
Immunity		acc. to EN 55103-2
Emission		acc. to EN 55103-1
EVAC		acc. to EN 60849

Installation/Configuration Notes



LBB 1999/00 rear view

Parts Included

Quantity	Component
1	LBB 1999/00 Plena Voice Alarm System Remote Control Extension
1	Set of 19” mounting brackets
1	1 m CAT-5 cable

Technical Specifications

Electrical*

Power supply	
Voltage	24 VDC, +15% / -15%
Current typical	50 mA
Current max (indicator test)	200 mA
Priority relay contacts	30 V, 1 A
Emergency relay contacts	30 V, 1 A
DC supply output	24 V, 200 mA (max)
LEDs / lamps	
On external power	50 V (200 mA max)

Power supply	
On internal power	5 mA max
Type	Open collector pull down

** Technical performance data according to IEC 60268-3*

Mechanical	
Dimensions (H x W x D)	88 x 430 x 90 mm (19 in wide, 2U high)
Weight	Approx. 2 kg
Mounting	Stand-alone, 19” rack
Color	Charcoal
Environmental	
Operating temperature	-10 ºC to +55 ºC (14 ºF to +131 ºF)
Storage temperature	-40 ºC to +70 ºC (-40 ºF to +158 ºF)
Relative humidity	<95%

Ordering Information

LBB 1999/00 Plena Voice Alarm System Remote Control Extension Kit kit for six-zone voice alarm router remote control	**LBB1999/00**

1

PRS-1AIP1 IP Audio Interface

Features

- **All-in-one solution for audio transport on IP-networks**
- **Supervised control inputs and outputs**
- **Supports re-broadcasting**
- **Configurable audio delay on the output for loudspeaker alignment**
- **Easy to install and configure via standard web-browser**
- **EN 60849 compliant IP solution**

The PRS-1AIP1 is a universal, IP-based audio device supporting VoIP and Audio over IP applications. It is an ideal solution for bridging audio and contact closures over long distance LAN and WAN networks, e.g. in shopping malls, tunnels, in and between railway stations. It extends and interfaces to Praesideo and non-network based traditional public address systems without the need for a PC during operation.

The unit has analog audio inputs and outputs for easy interfacing with optional pilot-tone supervision for emergency sound purposes. One audio input can be switched to microphone sensitivity with built-in microphone supervision. Also, the control inputs offer cable and connection supervision.

Control inputs and outputs can be used to set up an audio connection to start a remote call, but also to pass remote fault events to the system controller.

Functions

Audio

Multiple audio formats are supported: single channel, full duplex 16-bit PCM or G.711 for very low latency, and two-channel send or receive MP3 for high quality audio with various sample rates and compression settings.

The unit provides two balanced line inputs and two balanced line outputs. One of the inputs can be configured as balanced microphone input with a phantom power supply for electret / condenser microphones and microphone connection supervision. The output level is configurable.

Audio connection supervision using a 20 kHz pilot tone is supported, with detection on the audio input of the transmitter and regeneration on the audio output of the receiver.

A configurable audio delay can be used to artificially delay the playback of audio for loudspeaker alignment, e.g. in tunnels.

Audio Routing

Audio signals can be routed in uni-cast to up to 16 receivers, preconfigured or on activation of control inputs. Receivers are able to re-broadcast the incoming audio stream to other receivers. In case the interfaces are on the same LAN also broadcast is supported.

In PCM and G.711 (uLaw and aLaw) full duplex audio interfacing between two units is possible.

Control inputs and outputs

The unit has eight control inputs with configurable supervision on open and/or short-circuits. Eight control outputs have dry relay contacts. Control inputs can be routed to control outputs for remote actions or to pass on fault information between audio transmitter and receiver, in both directions. Control inputs can also be configured to change the audio routing.

An additional dry relay contact is provided for fault indication of the unit, including a high temperature fault situation.

Network Interfaces

The unit interfaces to 10 and 100 Mbit Ethernet networks and announces its IP-address that was given by a DHCP server. It can also search the network for a free IP-address or can be given a static IP-address. A second Ethernet connection is available to support network redundancy.

An RS 232 interface is build-in to communicate additional serial data over the IP network.

Power Supplies

Two power supply connections are provided as main input and backup input with supervision of both supplies.

Controls and Indicators (front)

- Reset button, recessed
- Two status indicator LEDs for network
- Eight status LEDs for control inputs

Interconnections (rear)

- Eight control inputs on Euro-connector
- Eight control outputs on Euro-connector
- Fault relay output on Euro-connector
- Two balanced audio inputs on Euro-connector (one line input, one line / microphone input)
- Two balanced audio outputs on Euro-connector
- Two Ethernet connections on RJ45
- RS 232 on Sub-D
- RS 485 on Euro-connector (future use)

- Main power supply on jack
- Backup power supply on Euro-connector

Certifications and Approvals

Region	Certification	
Europe	CE	
Safety		acc. to IEC 60065-98
Immunity		acc. to EN 55103-2 / EN 50130-4 / EN 55024
Emissions		acc. to EN 55103-1 / EN 55022
Emergency		acc. to EN 60849

Parts Included

Quantity	Component
1	PRS-1AIP1 IP Audio Interface
1	Power supply
1	Set of connectors

Technical Specifications

Electrical	
External power supply 1	18 to 56 VDC
External power supply 2	18 to 56 VDC
Power consumption	8 W max
Microphone input	
Sensitivity	-48.5 to -26 dBV
Impedance	1360 ohm
Frequency response	100 Hz to 15 kHz
S/N	>60 dB
Supervision detection	Electret: 0.4 – 5 mA Dynamic: 120 – 1300 ohm
Line Inputs	
Sensitivity	-16.5 to +6 dBV
Impedance	22 kohm
Frequency response	20 Hz to 15 kHz
S/N	>70 dB
Pilot tone detection level (input 2 only)	-30 dBV
Line outputs	
Level	6 dBV max
Pilot tone level (output 2 only)	-20 dBV (20 kHz)
Audio formats	
MPEG 1-layer 3 (MP3)	32, 44.1 and 48 kHz sample rate
	Encoding up to 192 kbps VBR
	Decoding up to 320 kbps (stereo)
MPEG 1-layer 2	16, 22.05 and 24 kHz sample rate
G.711	uLaw, aLaw at 8, 24 or 32 kHz sample rate
PCM	16-bit at 8, 24 or 32 kHz sample rate
Control inputs	8 x
Connectors	Removable screw terminals
Operation	Closing contact (with supervision)
Control / fault outputs	8 x / 1 x
Connectors	Removable screw terminals
Operation	Make contact (SPST, voltage free)
Rating	24 V, 0.5 A
Ethernet	
Connector	Dual RJ45, DTE-pinout
Standard	802.3i / 802.3u
Speed	10 / 100 Mbps, auto-negotiation
Flow	Full / half-duplex, auto-negotiation
Protocol	TCP/IP, UDP, RTP, IGMP, DHCP, SNMP
RS 232	
Connector	9-pin Sub-D male, DTE-pinout
Pinout	300 to 115.200 Baud
Setting (default)	9600, 8, N, 1
Mechanical	
Dimensions (H x W x D)	216 x 38 x 125 mm(8.5 x 1.5 x 4.92 in) (half 19” wide)
Weight	0.7 kg (1.5 lb)
Mounting	Stand-alone or in 19”-rack with additional frame
Color	Silver with Charcoal
Environmental	
Operating temperature	-5 ºC to +50 ºC (+23 ºF to +122 ºF)
Start-up temperature	0 ºC to +50 ºC (+32 ºF to +122 ºF)
Storage temperature	-20 ºC to +70 ºC (-4 ºF to +158 ºF)
Humidity	15 to 90 %
Air pressure	600 to 1100 hPa

Ordering Information

PRS-1AIP1 IP Audio Interface **PRS-1AIP1**
universal, IP-based audio device supporting VoIP and Audio over IP applications.

1

PLN-24CH12 24 V and PRS-48CH12 48 V Battery Chargers

Features

- **12 A battery charger**
- **6x 40 A, 3x 5 A outputs**
- **150 A back-up current**
- **Fully supervised, EN 54-4 certified**
- **Under-voltage and over-voltage protection**

The PLN-24CH12 and PRS-48CH12 Battery Chargers are designed for public address and emergency sound systems, to assure that the system batteries are always charged. Rack mountable, the unit charges lead-acid batteries and simultaneously provides 24 V or 48 V for system components that use 24 V or 48 V exclusively. These chargers are fully compliant and certified to EN 54-4. The battery chargers are premium quality, intelligent, microprocessor controlled devices.

Functions

Performance

The maximum charger current is 12 A for charging the battery. The maximum battery capacity, according to EN 54-4, is therefore 225 Ah, minimum size is 86 Ah. The maximum output of the back-up power system is 150 A.

The charger has an input voltage range of 195 V to 264 V, and a power factor corrector. The charger features automatic shutoff when the battery voltage is too low, to prevent battery damage. It also features over-voltage protection, protection against wrong battery polarity and short-circuit protection. The outputs are protected by fuses. The power supply takes a resistance measurement of the battery including connections every 4 hours.

The charger comes with a temperature sensor that is used to adjust the charging voltages.

The charger has additional 24 V or 48 V (depending on model) auxiliary outputs, to supply power to equipment that needs 24 V or 48 V as primary power. The current capacity of these outputs is 5 A per output.

The charger has relay outputs to signal a mains fault, battery fault and charger output voltage fault.

Controls and indicators

- Mains status LED
- Battery status LED
- Output voltage fault LED

Interconnections

- 6 main outputs for the system, each with their own fuse
- 3 auxiliary outputs for peripherals, system components that always use 24/48 V with a lower current need
- Fault relays
- Battery connection

Certifications and Approvals

Safety	acc. to EN 60950-1
EMC	EN 61000-6-1 EN 61000-6-2 EN 61000-6-3 EN 61000-6-4 EN 55022 class B
Evacuation	acc. to EN 54-4 EN 12101-10 class A, part 10: power supplies. CE CPD: PLN-24CH12: 0333-CPD-075381-1 PRS-48CH12: 0333-CPD-075383-1
Immunity	acc. to EN 55130-1/2
Emission	acc. to EN 55103-4

Installation/Configuration Notes

- 6 main outputs, 40 A (32 A GG fuse) per output.
- 3 auxiliary outputs, 5 A (5 AT fuse) per output.
- The maximum total back-up current is 150 A (9 outputs).
- The maximum charger output current to the battery and outputs combined is 12 A.

Parts Included

Quantity	Component
1	PLN-24CH12 24 V Battery Charger or PRS-48CH12 48 V Battery Charger
1	Mains plug
1	Installation and User Instructions
1	Temperature sensor with cable

Technical Specifications

Electrical

Mains power supply	
Voltage	195 to 264 VAC, 50 to 60Hz
Input current (PLN-24CH12)	2 A
Input current (PRS-48CH12)	4 A
Power consumption (PLN-24CH12)	380 W maximum
Power consumption (PRS-48CH12)	760 W maximum
Performance (PLN-24CH12)	
Voltage min.	21.6 VDC (auto shutdown)
Voltage max.	28.5 VDC
Performance (PRS-48CH12)	
Voltage min.	43.2 VDC (auto shutdown)
Voltage max.	56.9 VDC
Performance (PLN-24CH12 and PRS-48CH12)	
Max. charge current	12 A
Max. system current (Ib)	150 A
Main outputs (6 x)	
Voltage	24 or 48 VDC (battery voltage)
Current	40 A
Auxiliary outputs (3 x)	
Voltage	24 or 48 VDC (battery voltage)
Current	5 A
Fault outputs (3 x)	
Rating	24 V/1 A, 120VAC/500 mA voltage free
Contacts	Normally energized (failsafe)

Mechanical

Dimensions (H x W x D)	88 x 430 x 260 mm (19" wide, 2U high)
Input connections (connect to battery)	Screw terminal
Output connections (connect to system)	10 x pluggable screw connector
Weight	Approx. 6 kg
Mounting	19” rack
Color	Charcoal with silver

Environmental

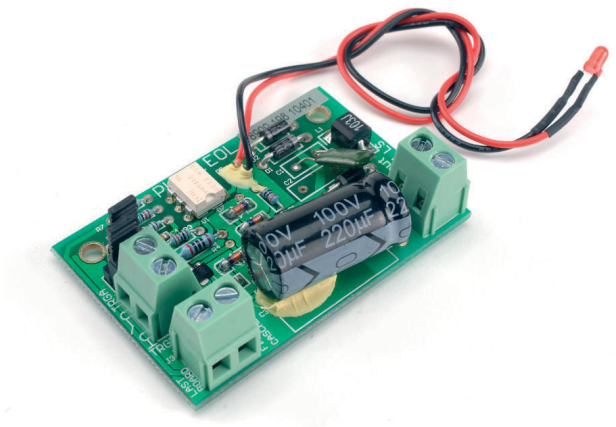
Operating temperature	-5 ºC to +45 ºC (23 ºF to +113 ºF)
Storage temperature	-25 ºC to +85 ºC (-13 ºF to +185 ºF)
Relative humidity	<95% (operating and storage)

Ordering Information

PLN-24CH12 24 V Battery Charger Charges lead-acid batteries and simultaneously provides 24 V.	**PLN-24CH12**
PRS-48CH12 48 V Battery Charger Charges lead-acid batteries and simultaneously provides 48 V.	**PRS-48CH12**

1

PLN-1EOL Plena End-of-Line Boards



Features

- **Pilot tone detection on 100 V loudspeaker lines**
- **Voltage free switch 200 V 1 A and LED indications of pilot tone**
- **10 kohm resistors on board for optional supervised connection**
- **Daisy chainable for monitoring multiple zones on a single input contact**
- **Fits on built-in mounts on selected Bosch loudspeakers**

A Plena end-of-line board is a PCB designed to detect the 20 kHz pilot tone generated by a supervised public address or voice alarm system. It activates a voltage free switch in the presence of a 20 kHz signal (pilot tone) above 5 V, as well as an LED for easy visual confirmation of operation.

Functions

Plena end-of-line boards monitor the presence of a pilot tone on a loudspeaker line. The board connects at the end of a loudspeaker line and detects the 20 kHz pilot tone signal. This signal is always present on the line: when back ground music (BGM) is playing, when a call is in progress, and when no signal is present. The 20 kHz tone is inaudible and at a very low level (-20dB). When the pilot tone signal is present, an LED lights up, and a contact on the board is closed. When the pilot tone fails, the contact opens, and the LED goes off. If mounted at the end of the loudspeaker line, this applies to the integrity of the whole line. Presence of the pilot tone signal does not depend on the number of loudspeakers on the line, the load on the line, or the line capacitance. The contact can be connected to a PA system, such as the Bosch Voice Alarm System, to detect and report faults on a loudspeaker line.

Several EOL boards can be daisy-chained to a single fault input. This allows a loudspeaker line with several branches to be monitored.

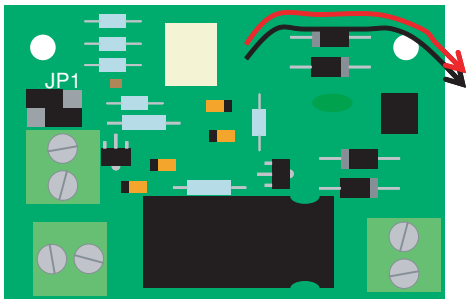
Since the background music also includes a 20 kHz pilot tone signal, there is no need to interrupt background music.

Certifications and Approvals

Region	Certification	
Europe	CE	Declaration of Conformity
Immunity		acc. to EN 55103-2
Emergency		acc. to EN 54-16 * / EN 60849 *

** When used with the Voice Alarm System and installed according to the Installation and User Instructions*

Installation/Configuration Notes

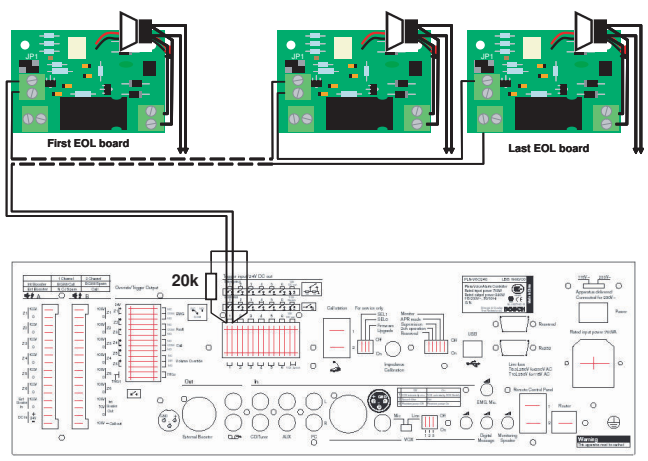


JP1 configuration for trigger output configuration

Using a daisy chain configuration it is possible to:

- Supervise several loudspeaker lines with only one fault input.
- Supervise several branches of a loudspeaker line with just one fault input

When connecting more than one EOL board on a single trigger input, and to supervise the boards, a 20 kohm or 22 kohm resistor should be connected in parallel with the trigger input. The boards are connected as shown in the following drawing.



Multiple boards on a single trigger input

Parts Included

Quantity	Components
6	PLN-1EOL Plena End of Line Board
1	Application note

Technical Specifications

Electrical

Input	**1 x**
Voltage	100 V loudspeaker line
Detection threshold	5 to 50 V @ 20 kHz
Output	2 x
Indicator	Red LED
Contact	Normally closed fail safe Bipolar MOS switch 250 Vp 190 mA max
Detection threshold*	5 to 50 V @ 20 kHz (contact and LED)

** LED threshold and switch threshold may be slightly different.*

Mechanical

Dimensions (H x W x D)	17 x 60 x 40 mm
Mounting	WLS II
Weight	Approx. 40 g

Environmental

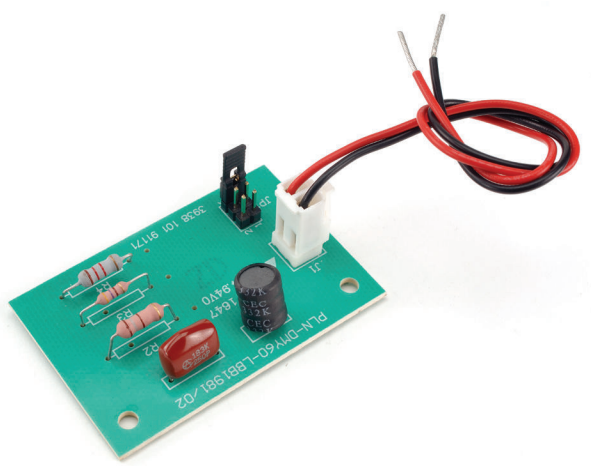
Operating temperature	-10 ºC to +55 ºC (14 ºF to +131 ºF)
Storage temperature	-40 ºC to +70 ºC (-40 ºF to +158 ºF)
Relative humidity	<95%

Ordering Information

PLN-1EOL Plena End-of-Line Boards **PLN-1EOL**
set of 6 end-of-line supervision boards

1

PLN-DMY60 Plena Dummy Load



Features

- **Provides filtered load at 20 kHz**
- **Makes longer loudspeaker lines possible**
- **Three power settings**
- **Fits on built-in mounts on selected Bosch loudspeakers**

The Plena Voice Alarm System employs a simple and easy to use method of loudspeaker surveillance based on impedance measurement. On long wire runs, external influences, such as cable capacitance and speaker impedance, can negatively influence the reliability of the measurements. The dummy loads provide a filtered load exclusively at the pilot tone frequency. This greatly increases the dependability of impedance measurements, providing reliable break or short circuit detection, even on long wire runs.

Functions

To improve the performance of the impedance measurement Bosch Security Systems introduced the Plena Dummy Load. It increases the loudspeaker load at the monitored frequency of 20 kHz, while having a minimal load in the normal audio frequency range.

When connected in parallel with the last loudspeaker on a line, it will increase the percentage of impedance present at the end of the line, thus increasing the number of loudspeakers that can be attached. At the same time, it will also increase the margin for masking by cable capacitance, allowing longer cable lengths.

The dummy load connects in parallel to the last loudspeaker on a line, which must be a Bosch loudspeaker with the appropriate mounting studs. It has a jumper to set the load (at 20 kHz) to 8, 20 and 60 W, according to the results calculated by the Dummy Load Calculator.

The Dummy Load Calculator is a spreadsheet that uses macros to calculate whether an application can use a dummy load, and what the optimal load setting would be. The spreadsheet is available from all Bosch dealers.

Certifications and Approvals

Region	Certification	
Europe	CE	Declaration of Conformity
Poland	CNBOP	

Parts Included

Quantity	Component
12	PLN-DMY60 Plena Dummy Load
1	Application note

Technical Specifications

Electrical

Input	
Connector	High temp flying leads
Voltage	100 V loudspeaker line
Load	8, 20 and 60 W

Mechanical

Dimensions (H x W x D)	17 x 30 x 50 mm
Mounting	WLS II
Weight	Approx. 80 g

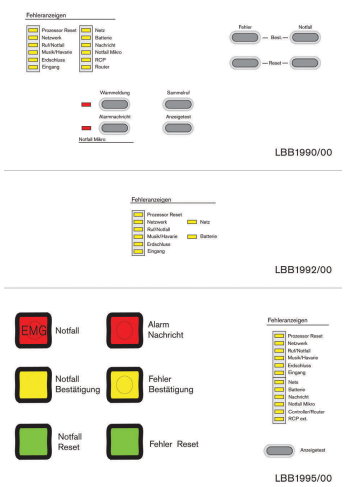
Environmental

Operating temperature	-10 ºC to +55 ºC (14 ºF to +131 ºF)
Storage temperature	-40 ºC to +70 ºC (-40 ºF to +158 ºF)
Relative humidity	<95%

Ordering Information

PLN-DMY60 Plena Dummy Load **PLN-DMY60**
set of 12 dummy loads

PLN-VASLB-xx Plena Voice Alarm System Labels



Features

- **Available in 6 languages**
- **High quality labels**
- **Easy placement on the front panel**

The labels can be placed on the front panel of a Plena Voice Alarm Controller, Router and Fireman's panel. This makes it very simple to operate as the text on the front panel is in the local language.

The labels are available in the languages: Dutch, French, German, Polish, Russian and Swedish.

Ordering Information

PLN-VASLB-NL Plena VAS labels, Dutch (10 pcs) Dutch, set of 10 pieces, and can be placed on the front panel	**PLN-VASLB-NL**
PLN-VASLB-DE Plena VAS labels, German (10 pcs) German, set of 10 pieces, and can be placed on the front panel	**PLN-VASLB-DE**
PLN-VASLB-FR Plena VAS labels, French (10 pcs) French, set of 10 pieces, and can be placed on the front panel	**PLN-VASLB-FR**
PLN-VASLB-SE Plena VAS labels, Swedish (10 pcs) Swedish, set of 10 pieces, and can be placed on the front panel	**PLN-VASLB-SE**
PLN-VASLB-PL Plena VAS labels, Polish (10 pcs) Polish, set of 10 pieces, and can be placed on the front panel	**PLN-VASLB-PL**