BOSCH
Invented for life

LBB 1990/00 Plena Voice Alarm Controller

- **Heart of the Plena Voice Alarm System**
- **TÜV-certified for IEC 60849**
- **Six-zone system controller**
- **Built-in 240 W amplifier**
- **12 business and emergency control inputs**

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 IEC 60849 standard, 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, or for additional power if the total power requirement exceeds 240 W (maximum 1000 W per six zones). 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 BGM output is connected to the 70 V line, so it is possible to connect a total load of 480 W in a two-channel system combined with a 480 W amplifier. 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
- 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

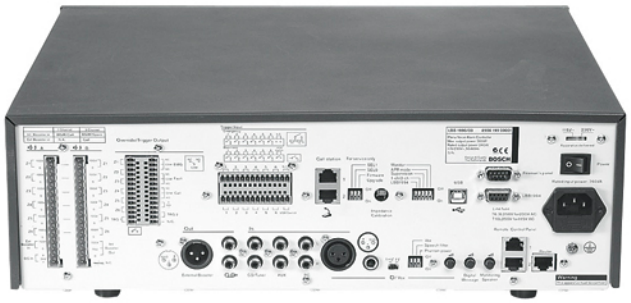
Back

- 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

Safety	acc. to EN 60065
Immunity	acc. to EN 55103-2
Emission	acc. to EN 55103-1
EVAC (TÜV certified)	acc. to IEC 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 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, +20% / -10%
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
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
Mains power supply	
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 (fail-safe)
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)
-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 at fs=22.05kHz at fs=16kHz at fs=12kHz at fs=11.025kHz at fs=8kHz	100 Hz to 11 kHz (+1/-3 dB) 100 Hz to 10 kHz (+1/-3 dB) 100 Hz to 7.3 kHz (+1/-3 dB) 100 Hz to 5.5 kHz (+1/-3 dB) 100 Hz to 5 kHz (+1/-3 dB) 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. 15 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

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