PLN-1LA10 Plena Loop Amplifier

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BOSCH
Invented for life

- ▶ High power, current driven amplifier
- ▶ Two microphone/line inputs, one priority input (100 V)
- ▶ Selectable frequency range and tone controls
- ▶ Limiter and automatic gain control (AGC)
- ▶ Integrates in an EN 54-16 and EN 60849 compliant system

The PLN-1LA10 Loop Amplifier is a cost-effective amplifier designed to drive a wire loop installed in the floor or ceiling, covering an area of up to 600 m^2 per amplifier. This solution enables hearing-aid users in the area enclosed by the wire loop to hear all announcements, or music. Hearing-aid users can set their devices to the T-mode setting to receive the signal coming from the loop. They receive announcements in excellent audio-quality, without the background noise or reverberations that normally impair intelligibility for people with hearing disabilities.

Functions

The loop amplifier can be connected to a mixing amplifier's line level output, or it can accept up to two microphone/line signals directly. A 100 V priority input is available for uplink to a Plena Voice Alarm System. This input can be monitored for the presence of a pilot-tone. The built-in supervision monitors all key functions of the loop amplifier, and the fault state is available on a fail-safe relay. This makes it possible to use the loop amplifier in an IEC 60849 compliant system, and to include the induction loop in the supervised transmission paths.

For added ease, the loop amplifier is equipped with a limiter that keeps the output field strength below the prescribed 100 mA/m. This circuitry can also be set to an automatic gain control (AGC) that amplifies weak signals for enhanced intelligibility, while attenuating loud signals. This ensures that all information is presented at a comfortable listening level.

The unit has tone controls and a metal loss compensation circuit to adjust the sound to the program material and the environment. The controls have locks to prevent unwanted access after they have been adjusted.

The loop amplifier is stackable (master/slave configuration) to cover very large areas, and supports low spillover schemes. Its unique quadrate configuration provides uniform field strengths even over multiple loops.

Controls and indicators
Front
- LED power meter
- Current meter
- Four LEDS for fault, limiter, AGC, loop integrity
- Headphones socket
- Two tone controls

- Three input volume controls (master and two channels)
- On/off switch

Back
- Metal loss compensation control
- Supervision switch
- Voltage selector
- Frequency range switch
- AGC/Limiter switch
- AGC range control
- VOX/mix switch
- Pre/post amp switch
- Two phantom power switches
- Two Mic/line switches

Interconnections
Back
- Master input
- Two slave outputs
- Audio inputs
- Priority input
- Induction loop output
- Line output
- Fault output
- Ground screw
- Mains socket

Certifications and approvals

Safety	acc. to EN 60065
Immunity	acc. to EN 55103-2
Emission	acc. to EN 55103-1
Induction loop systems	acc. to EN 60118-4
EVAC	acc. to EN 60849 acc. to EN 54-16

Region	Certification
Europe	CE

Installation/configuration notes

PLN-1LA10 rear view

Parts included

Quantity	Component
1	PLN-1LA10 Loop Amplifier
1	Power cord
1	Set of 19" mounting brackets
1	Plena CD
	Safety Instructions

Technical specifications

Electrical

Mains power supply	
Voltage	230/115 VAC, ±10%, 50/60 Hz
Inrush current	7 A at 230 VAC / 14A at 115 VAC
Max power consumption	500 VA
Performance	
Output current	10 A
Frequency response	50 Hz to 10 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	2 x
Connector	3-pin XLR, balanced mic/line level (switchable)
Sensitivity	1 mV / 1 V (mic/line)
Impedance	>1 kohm
Dynamic Range	100 dB
S/N (flat at max volume)	75 dB
Headroom	25 dB
Phantom power supply	16 V (switchable)
VOX functionality	Input 1 (switchable) mutes input 2
VOX sensitivity	-10 dB ref nominal input
Priority input	
Connector	Screw
Sensitivity	100 V, transformer balanced
Impedance	>100 kohm
S/N (flat at max volume)	63 dB
Headroom	25 dB
Pilot tone detection	-20 dB, ref 100 V (10 V)
Pilot tone threshold	-26 dB, ref 100 V (5 V)
Master input*	1 x
Connector	1/4" TS jack
Line output	

Connector	3-pin XLR, balanced
Nominal level	1 V
Impedance	200 ohm
Loop output	
Connector	Screw
Slave output	(for master input of other PLN-1LA10)
Connector	1/4"TS jack 0° to 90°
Fault Relay	
Connector	Screw
Contacts	100 V, 2 A (voltage free, SPDT)

* Only intended for slave output of another PLN-1LA10. Plugging a jack into this input disables all other inputs and the limiter. The unit becomes a slave to the connected master. Only the master control on the front panel will function. To monitor the level, switch the VU meter switch to POST Amp.

Mechanical

Dimensions (H x W x D)	94 x 430 x 320 mm (19" wide, 2U high)
Weight	Approx. 11.6 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%
Acoustic noise level of fan	<35 dB SPL at 1m, temperature controlled

Ordering information

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Order number **PLN-1LA10**