

## Class D Loop Amplifier - LD Serie



2-channel low loss amplifier

EN

Installation and user manual  
**LD 1.2 / 2.2 / 3.2**



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## 1. Introduction

### 1.1 Purpose

The Installation and Operation Manual provides the necessary information for installing, configuring and using an LD serie amplifier.

### 1.2 Targeted audience

The Installation and Operation Manual is intended for installers and users of LD serie amplifier.

### 1.4 Alerts

This manual discusses four types of alerts.

The type of alert is closely related to the effect that may occur if the alert is not observed. These alerts, ranked in ascending order of severity, are as follows:

- Note

Additional information. Generally, the non-observance of a Note type alert does not result in any material or bodily injury.

- Attention

Failure to observe a caution alert may result in property damage.

- Warning

Non-compliance with a type alert Warning may result in serious personal injury and property damage.

- Danger

Failure to observe a danger alert may result in death.

## 1.5 Icons

### 1.5.1 Icons et notes

Icons used with notes provide additional information about the note. See the following examples:



**Note:**  
General icon of notes



**Note:**  
Symbol referring to the source indicated information.

### 1.5.2 Attention, warning and danger icons

The icons used in combination with Attention, Warning and Danger indicate the type of risk present. See the following examples:



**Attention, warning, danger:**  
the general icon of precautionary statements,



**Attention, warning, danger:**  
Electrocution risk icon.



**Attention, warning, danger:**  
Electrostatic discharge risk icon.

## 1.5 Conversion tables

In this manual, SI units are used to express lengths, masses, temperatures etc.

These can be converted to non-metric units using the following information.

Table 1: length units conversion


25,40 mm = 25,4 mm	1 mm = 1,00000
25,40 mm = 2,54 cm	1 cm = 0,3937 po
30,48 cm = 0,3048 m	1 m = 3,281 pd
1 ml = 1,609 km	1 km = 0,622 ml

Table 2: Mass units conversion

1 lb = 0,4536 kg	1 kg = 2,2046 lb
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1 psi = 68,95 hPa	1 hPa = 0,0145 psi
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Table 3: Pressure units conversion

	<p><b>Note:</b></p> <p>1 hPa = 1 mbar</p>
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$^{\circ}F = 9/5. (^{\circ}C + 32)$	$^{\circ}C = 5/9. (^{\circ}F 32)$
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Table 4: temperature units conversion

## 2. Description

The proposed induction loop amplifier range consists mainly of Opus Technologies amplifier developed and manufactured in France, but also products from the leading brands in the magnetic loop field such as Contacta and Current Thinking.

With our know-how and in-house development we bring to our customers the most complete range of the French market.

### 2.1 the range

The new LD 1.2, 2.2 and 3.2 of the Opus Technologies range are next-generation, French-made magnetic loop amplifiers. The amplifiers, robust, are the most compact on the market while offering the necessary features (AGL, MLC, compressor, ... etc) to ensure installation of a room ranging from 250m<sup>2</sup> to 1000m<sup>2</sup>:

- LD 1.2 covers 300 to 600 m<sup>2</sup>
- LD 2.2 covers 525 to 1200 m<sup>2</sup>
- LD 3.2 covers 1000 to 2000 m<sup>2</sup>

### 2.2 Content

Package Content:

- LD 1.2, 2.2 or 3.2 amplifier
- Power cord
- 2x 3-points connectors
- 2x 2-points connectors
- 1x 2-points connectors
- A set of stickers « space adapted for the hearing impaired »
- A Installation and use guide
- 1x jack 6.35 Stéréo
- OP-R (optionnal)

### 2.3 OP-R (optionnal)

OP-R content:

- 2x rack mounting brackets
- 2x brackets
- 8x fixing screws

## 2.4 Safety note

The majority of problems with the magnetic induction loop (BIM) happens when the installation has not been properly reflected so let's take a little time before starting the installation and gain in result and time.

Ideally, the loop amplifier should be placed near the area to be covered. This may involve placing the amplifier on a panel, under a desk or under a table.

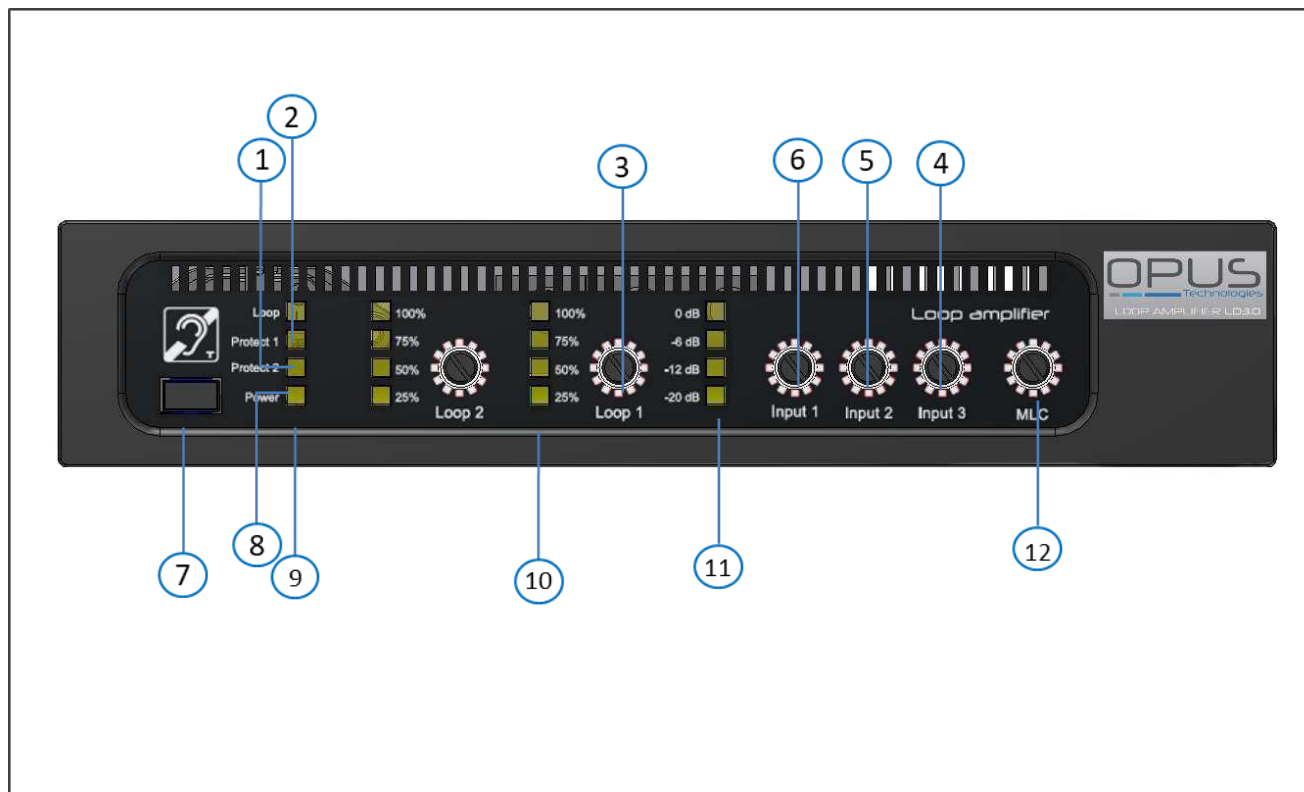
The pickup microphone should be as close as possible to the input of the amplifier.

To position the loop in the space to be equipped, it is important to take into account the future users of the system.

For example, if you only need to plan the speaker and the client, a loop around the desk may be a better solution rather than a loop around the perimeter of the room. It will limit radiation and increase confidentiality.

### 3. Commands, Connections and Settings

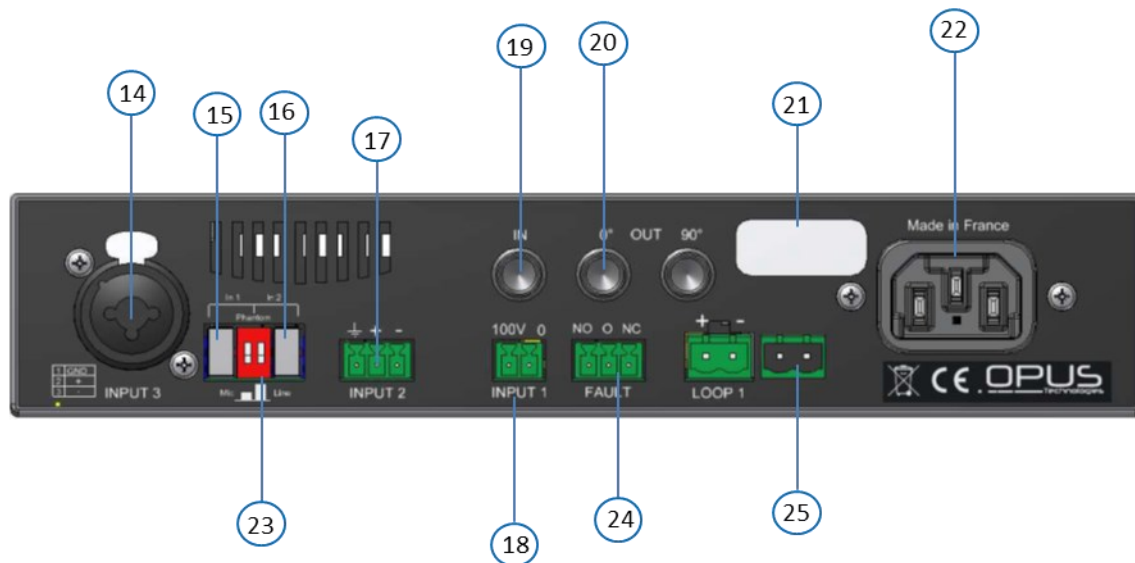
#### 3.1 Front and adjustment



1. « protect »LED, fault synthesis display
2. « Loop » LED, loop presence
3. Current output setting
4. Input 3 setting (100V)
5. Input 2 setting (Line or microphone)
6. Input 1 setting (Line or microphone)
7. ON/OFF push button
8. « Clip » LED, display saturation amplifier
9. « Power » LED, ON/OFF display
10. Meter input signal
11. Adjustment MLC (Metal Loss Compensation)  
helps reduce the problems of interference to metal structures.
- 12.



### 3.2 connections

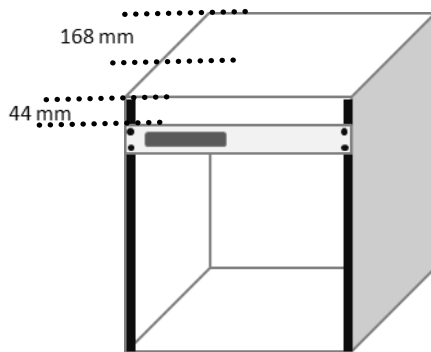


- 14. Input 1 combo: microphone or line
- 15. Push button for line or microphone communication of the input 1
- 16. Push button for line or microphone communication of the input 2
- 17. Phoenix type 2 terminal block input: microphone or line
- 18. Phoenix type 3 terminal block input: priority 100V
- 19. Input 0° or 90°
- 20. 0° or 90° output to slave amplifier
- 21. Serial number label
- 22. Connecting power cords
- 23. Phantom power selection switch
- 24. NO / NC fault synthesis relay
- 25. Loop input on terminal block Phoenix type

## 4. Racking

### 4.1 Ventilation and racking

Leave a space of 1U (44mm) above the amplifier  
Leave a space of at least 168 mm between the bottom of the rack and the amplifier



**Attention, avertissement, danger:**

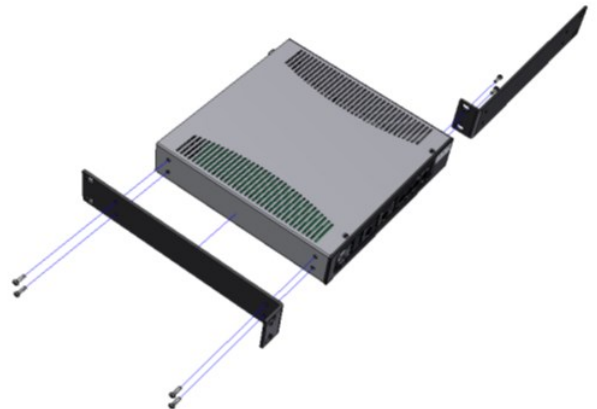
LD1 / 2 / 3.2 amplifiers contain an advanced protection circuit, which allows them to reduce the power output to maintain safe operating temperatures. Insufficient ventilation may cause the amplifier output power to be reduced during normal operation (indicated by the red LIMITER / PROTECT LEDs lighting up). To reduce the risk of thermal limitation and allow proper heat dissipation, it is recommended to keep clear the space directly above and behind these amplifiers.

Secure the rack mounting brackets as shown to the right using the mounting screws provided in the kit.

Then integrate the amplifier into the bay.

#### 4.2.2 Integration of two rack amplifiers

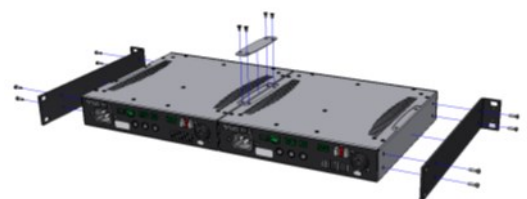
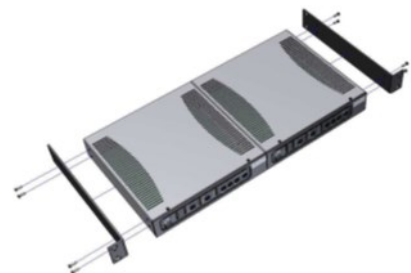
Option required: OP-R mounting kit



Secure the rack mounting brackets as shown to the right using the mounting screws provided in the kit.

Then, attach the amplifiers to each other using the brackets.

Finally, integrate the amplifiers into the rack.



## 4.2 Rack integration

### 4.2.1 Integration of a rack amplifier

Option required: OP-R mounting kit

### 4.2.3 Integrating an amplifier on a wall

Option required: OP-R mounting kit

Fasten the brackets as shown in the picture using the screws provided in the kit.

Then, attach the amplifier to the desired wall.

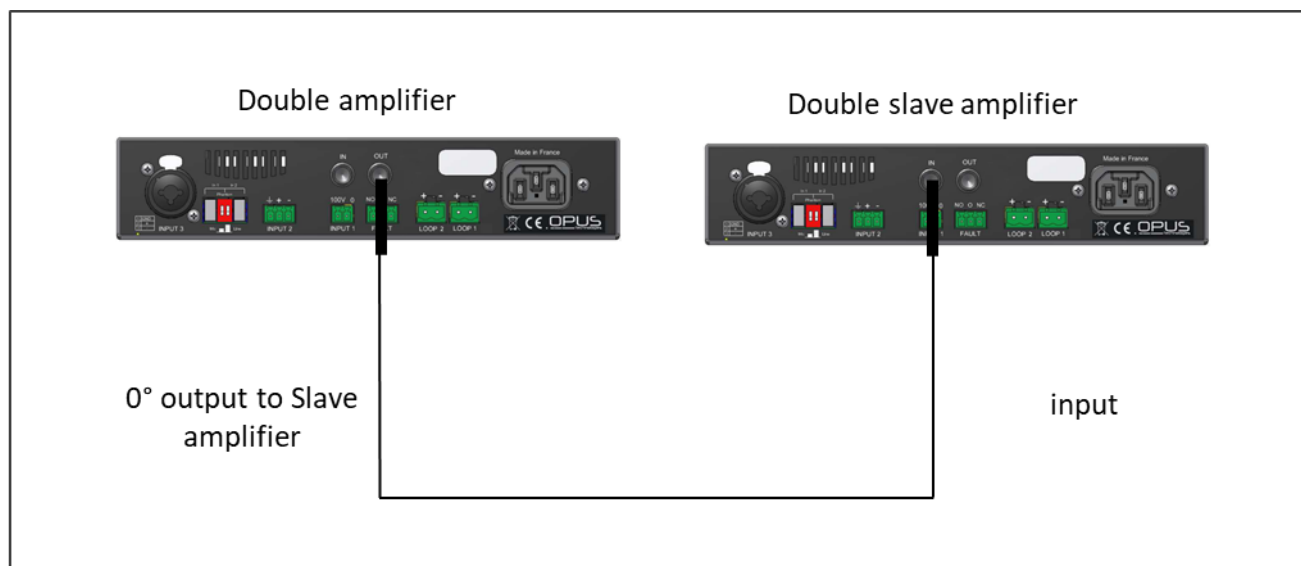


## 5. Installation

### 5.1 Two amplifiers LD .2 connection

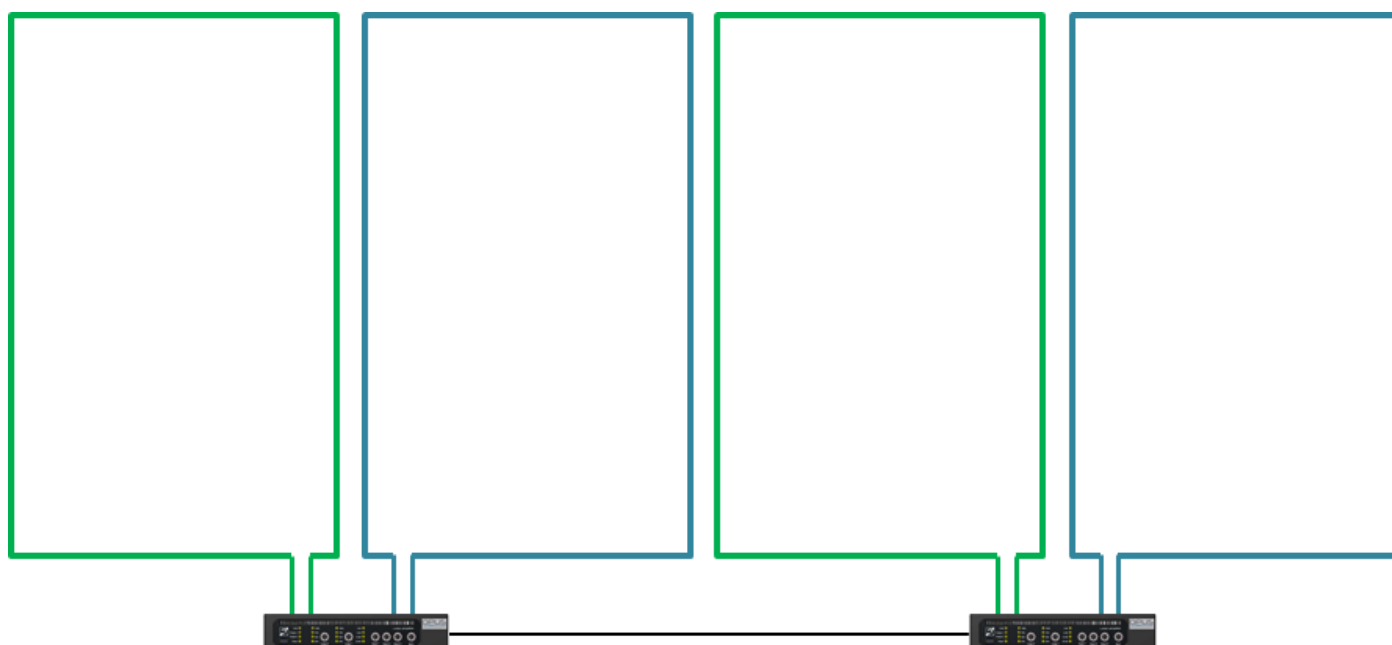
#### Necessary material :

6.35 Stereo Jack Cable



### 5.2 For the use of a large coverage system

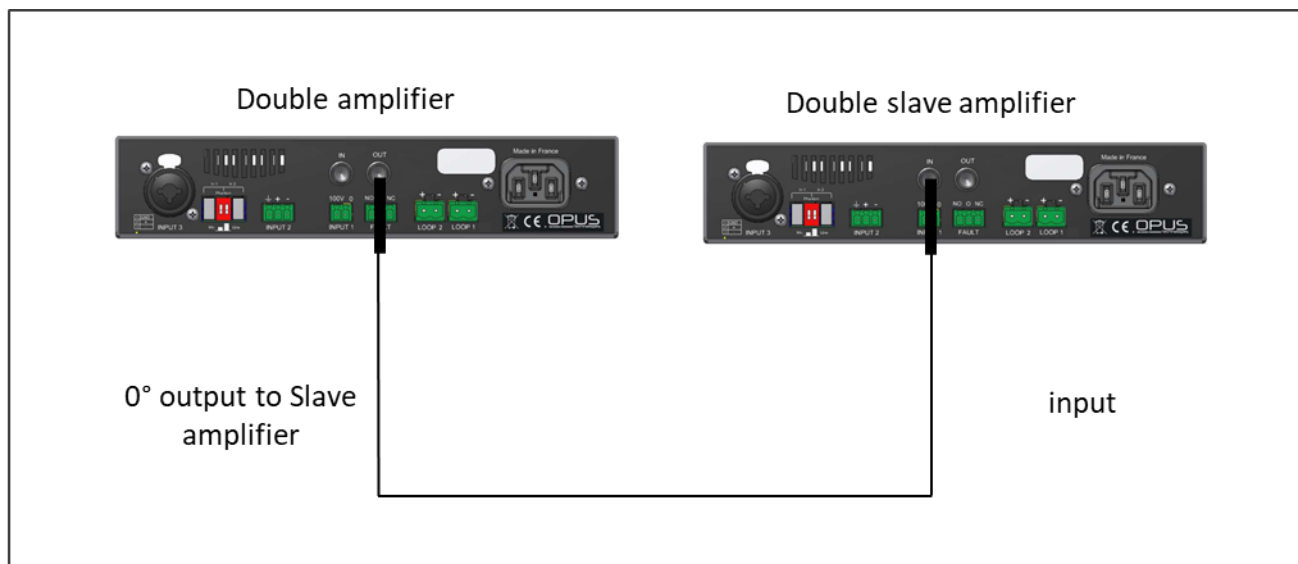
1. Connect the loop on the terminals provided for this purpose: Loop terminal block of the amplifier
2. Insert an audio source at input 1 or 2 of the master amplifier.
3. Connect the master amplifier to the slave amplifier using the connecting cord.



### 5.3 LD .2 and LD .0 amplifiers connection

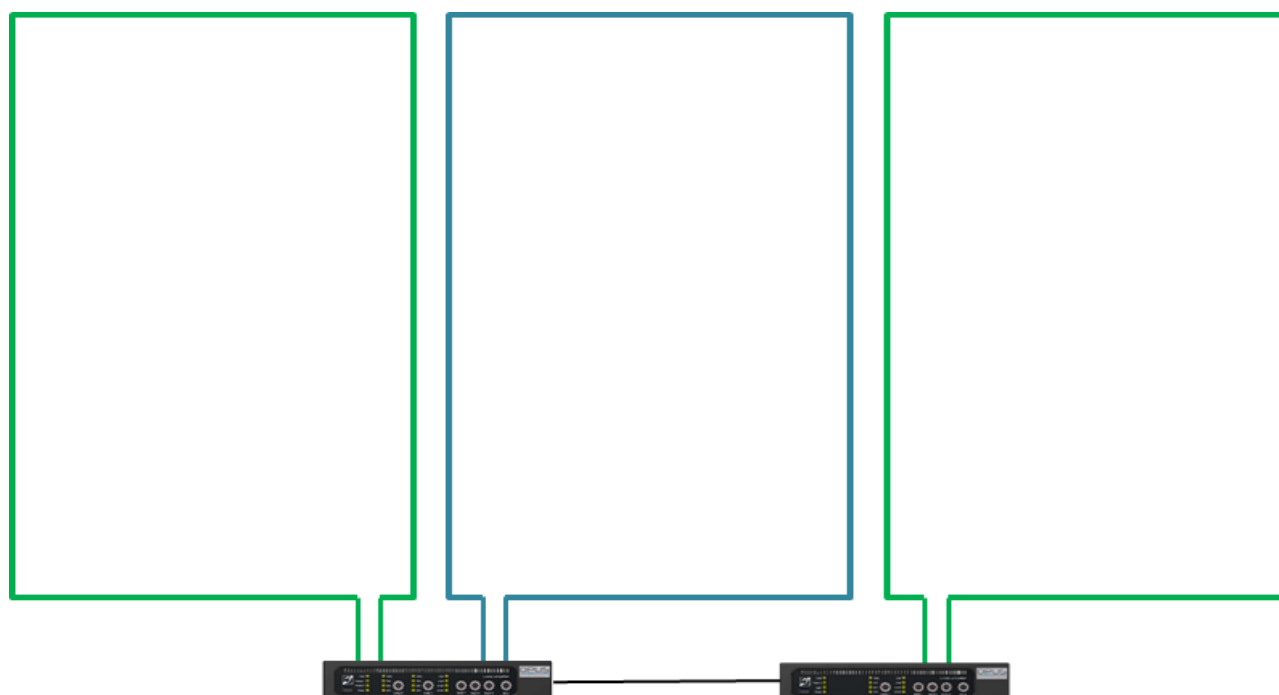
#### Necessary material :

6.35 Stereo Jack Cable



### 5.2 For the use of a large coverage system

1. Connect the loop on the terminals provided for this purpose: Loop terminal block of the amplifier
2. Insert an audio source at input 1 or 2 of the master amplifier.
3. Connect the master amplifier to the slave amplifier using the connecting cord.



## 6. Explication

Holding and terminating the wire forming the loop are connected to an audio amplifier. The hearing aid has a coil often called "T" or "T-coil" which is placed inside the prosthesis and consists of a wire forming turns. The magnetic field generated by the large loop will cross the small loops in the prosthesis and, by the induction process, the electrical signal present in the large loop will be found in small. The signal of the audio amplifier is transmitted to the prosthesis, which will then restore it to the ear of the hearing-impaired.

The loop can be installed at floor or ceiling level, more precisely between 1.10m and 2.20m from the listening height (ears).

The presence of an auditory loop is often indicated by a blue logo representing a crossed out ear and a letter T. Generally, a hearing aid has two major positions, the M and the T. The position M makes it possible to perceive the sound thanks to sound pressure as a microphone, while the position T (T for telephone) directly receives the audio signals transmitted by induction via the integrated coil. Some prostheses combine these two modes of operation with the

MT



position. It allows the hearing impaired to perceive both ambient noise and inductively transmitted signals.

## 7. Spécifications

	LD1.0	LD2.0	LD3.0
Coverage	250 m <sup>2</sup> (10x25 m <sup>2</sup> )	450 m <sup>2</sup> (15x30 m <sup>2</sup> )	1000 m <sup>2</sup> (20x45 m <sup>2</sup> )
Inputs			
Audio input	3 inputs: x2 Ligne/microphone - x1 100V	3 inputs: x2 Ligne/microphone - x1 100V	3 inputs: x2 Ligne/microphone - x1 100V
Type	Phoenix and/or Combo Neutrik	Phoenix and/or Combo Neutrik	Phoenix and/or Combo Neutrik
Power supply	12V 2mA	12V 2mA	12V 2mA
Sensitivity	-50dB micro, +40dB 100V, -10dB ligne	-50dB micro, +40dB 100V, -10dB ligne	-50dB micro, +40dB 100V, -10dB ligne
EntSlave input	--	6.35mm prise jack. 2 <sup>nd</sup> LD2.0	6.35mm prise jack. 2 <sup>nd</sup> LD3.0
Priority	100V input	100V input	100V input
Power supply			
Type	integrated	Integrated	integrated
voltage	230V (optionnal 120V) 50/60 Hz	230V (optionnal 120V) 50/60 Hz	230V (optionnal 120V) 50/60 Hz
power	300VA	300VA	300VA
Consumption	6W	6W	6W
AUDIO CHARACTERISTICS			
Metal loss	0 to 3 dB by octave	0 to 3 dB par octave	0 to 3 dB par octave
Automatic Gain Control	AGC optimized for speech Dynamic > 36 dB	AGC optimized for speech Dynamic > 36 dB	AGC optimized for speech Dynamic > 36 dB
Bandwidth	80Hz to 9.5kHz	80Hz to 9.5kHz	80Hz to 9.5kHz
Phase change	x	Phase module (90° ou 0°)	Phase module (90° ou 0°)
Output			
Loop impedance	0.5 Ω à 3 Ω	0.5 Ω à 3 Ω	0.5 Ω à 3 Ω
Output voltage	35V rms (50V pK)	35V rms (50V pK)	35V rms (50V pK)
Peak current	8A pK	11A pK	15A pK
RMS current	5A rms	7A rms	10A rms
ADDITIONAL FUNCTIONS			
Defaults	« protect » LED display	« protect » LED display	« protect » LED display
Vérification (synthesis lack)	DC current too high—open loop—thermal protection	DC current too high—open loop—thermal protection	DC current too high—open loop—thermal protection
Relay	NO / NC default relay	NO / NC default relay	NO / NC default relay
DIMENSIONS (MM)			
HxLxD	42 x 200 x 215 mm	42 x 200 x 215 mm	42 x 200 x 215 mm
Weight	1,2 Kg	1,2 Kg	1,3 Kg
	LD1.2	LD2.2	LD3.2
Coverage max: single loop	600 m <sup>2</sup> (15x40 m <sup>2</sup> )	1200 m <sup>2</sup> (20x60 m <sup>2</sup> )	2000 m <sup>2</sup> (25x80 m <sup>2</sup> )
Coverage max : Multiloop	300 m <sup>2</sup> (10x30 m <sup>2</sup> )	525 m <sup>2</sup> (15x35 m <sup>2</sup> )	1000 m <sup>2</sup> (20x50m <sup>2</sup> )

## Cable section table

	Maximum length (m) / cable size (mm <sup>2</sup> )				
Amplifier	1	1,5	2,5	4	OP-RC
LD1.0	70	80	90	100	90
LD2.0	90	105	120	140	140
LD3.0	90	105	140	160	140







[illegible]

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| manuel d'installation et d'utilisation | installation and user manual | LD 1.2/ 2.2/ 3.2

For any questions, contact us.

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