

Loop amplifiers for areas from 250 to 10000m<sup>2</sup>



**BM-A250**

**BM-A1000**

**USER GUIDE**

H10795/H10797 - Version 1 / 03-2018

# 1 - Safety information

## Important safety information



This unit is intended for indoor use only. Do not use it in a wet, or extremely cold/hot locations. Failure to follow these safety instructions could result in fire, electric shock, injury, or damage to this product or other property.



Any maintenance procedure must be performed by a CONTEST authorised technical service. Basic cleaning operations must thoroughly follow our safety instructions.



This product contains non-isolated electrical components. Do not undertake any maintenance operation when it is switched on as it may result in electric shock.

## Symbols used



This symbol signals an important safety precaution.



The WARNING symbol signals a risk to the user's physical integrity. The product may also be damaged.



The CAUTION symbol signals a risk of product deterioration.

## Instructions and recommendations

### 1 - Please read carefully :

We strongly recommend to read carefully and understand the safety instructions before attempting to operate this unit.

### 2 - Please keep this manual :

We strongly recommend to keep this manual with the unit for future reference.

### 3 - Operate carefully this product :

We strongly recommend to take into consideration every safety instruction.

### 4 - Follow the instructions:

Please carefully follow each safety instruction to avoid any physical harm or property damage.

### 5 - Avoid water and wet locations :

Do not use this product in rain, or near washbasins or other wet locations.

### 6 - Installation :

We strongly encourage you to only use a fixation system or support recommended by the manufacturer or supplied with this product. Carefully follow the installation instructions and use the adequate tools.

Always ensure this unit is firmly fixed to avoid vibration and slipping while operating as it may result in physical injury.

### 7 - Ceiling or wall installation :

Please contact your local dealer before attempting any ceiling or wall installation.

### 8 - Ventilation :

The cooling vents ensure a safe use of this product, and avoid any overheating risk. Do not obstruct or cover these vents as it may result in overheating and potential physical injury or product damage. This product should never be operated in a closed non-ventilated area such as a flight case or a rack, unless cooling vents are provided for the purpose .

### 9 - Heat exposure :

Sustained contact or proximity with warm surfaces may cause overheating and product damages. Please keep this product away from any heat source such as a heaters, amplifiers, hot plates, etc...

**CAUTION**  
RISK OF ELECTRIC SHOCK  
DO NOT OPEN

**WARNING :** This unit contains no user-serviceable parts. Do not open the housing or attempt any maintenance by yourself. In the unlikely even your unit may require service, please contact your nearest dealer.  
In order to avoid any electrical malfunction, please do not use any multi-socket, power cord extension or connecting system without making sure they are perfectly isolated and present no defect.

**Sound levels**

Our audio solutions deliver important sound pressure levels (SPL) that can be harmful to human health when exposed during long periods. Please do not stay in close proximity of operating speakers.

**Recycling your device**

- As HITMUSIC is really involved in the environmental cause, we only commercialise clean, ROHS compliant products.
- When this product reaches its end of life, take it to a collection point designated by local authorities. The separate collection and recycling of your product at the time of disposal will help conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment.

### 10 - Electric power supply :

This product can only be operated according to a very specific voltage. These information are specified on the label located at the rear of the product.

### 11 - Power cords protection:

Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at lugs, convenience receptacles and the point where they exit from the fixture.

### 12 - Cleaning precautions :

Unplug the product before attempting any cleaning operation. This product should be cleaned only with accessories recommended by the manufacturer. Use a damp cloth to clean the surface. Do not wash this product.

### 13 - Long periods of non use :

Disconnect the unit's main power during long periods of non use.

### 14 - Liquids or objects penetration :

Do not let any object penetrate this product as it may result in electric shock or fire. Never spill any liquid on this product as it may infiltrate the electronic components and result in electric shock or fire.

### 15 - This product should be serviced when :

Please contact the qualified service personnel if :

- The power cord or the plug has been damaged.
- Objects have fallen or liquid has been spilled into the appliance.
- The appliance has been exposed to rain or water.
- The product does not appear to operate normally.
- The product has been damaged.

### 16 - Inspection/maintenance :

Please do not attempt any inspection or maintenance by yourself. Refer all servicing to qualified personnel.

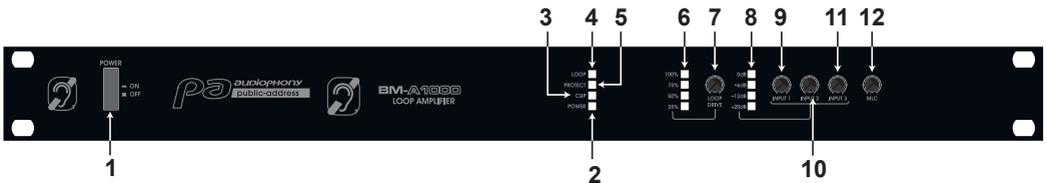
### 17 - Operating environment :

Ambient temperature and humidity: +5 - +35°C, relative humidity must be less than 85% (when cooling vents are not obstructed).  
Do not operate this product in a non-ventilated, very humid or warm place.

## 2 - Packaging content

<p><b>A</b></p>  <p>Amplificateur BM-A450/BM-A1000</p>	<p><b>B</b></p>  <p>x1 Cordon d'Alimentation</p>	<p><b>C</b></p>  <p>x2 Connecteurs 3 points</p>	
<p><b>D</b></p>  <p>x1 Connecteur 2 points</p>	<p><b>E</b></p>  <p>x2 Connecteurs 2 points</p>	<p><b>F</b></p>  <p>x2 Autocollants « Espace adapté aux malentendants »</p>	<p><b>G</b></p>  <p>x1 Notice</p>

## 3 - Front face and settings



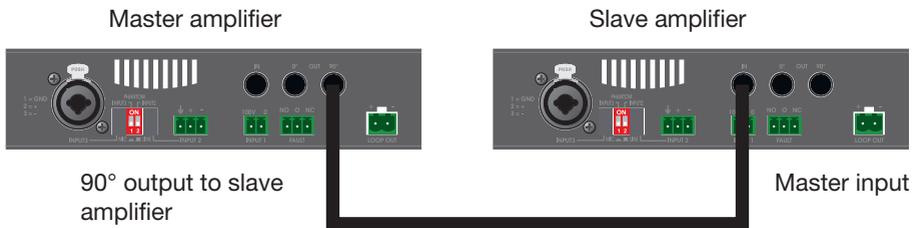
1. ON/OFF switch
2. "POWER" LED, ON/OFF display
3. "CLIP" LED, Affichage niveau d'entrée trop élevé
4. LED "LOOP", Display input level too high
5. "PROTECT" LED, fault overview display
6. Output current view meter
7. Output current setting
8. Input signal view meter
9. Input 1 setting (Line or mic)
10. Input 2 setting (Line or mic)
11. Input 3 setting (Line or mic) (100V)
12. MLC setting (Metal Loss Compensation) reduces interference problems with metal structures

## 4 - Connections



13. Combo 1 input : Line or mic
14. Phantom power switch
15. Line or microphone selector for input 3
16. Line or microphone selector for input 2
17. Input 2 terminal block Phoenix type : Mic or line
18. Master amplifier input (BM-A1000 only)
19. Output to Slave amplifier in phase (BM-A1000 only)
20. Output to Slave amplifier 90° out of phase (BM-A1000 only)
21. Input 2 terminal block Phoenix type : 100V priority
22. NO/NF fault synthesis relay
23. oop input on terminal block Phoenix type
24. Connecting power cord

## 5 - Connecting two amplifiers

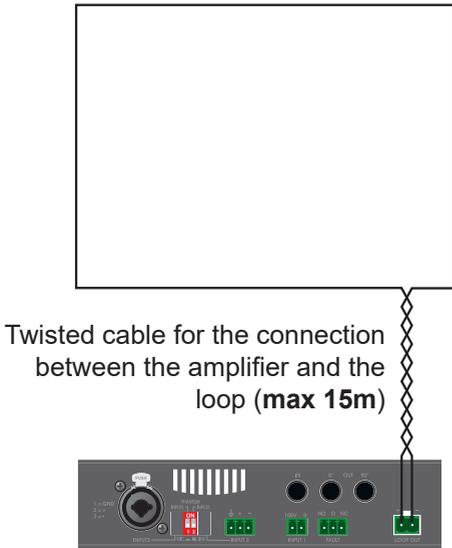


For the use of a pin system or a system with a large cover:

1. Connect the loops to the terminal blocks provided for this purpose: Loop terminal block of the amplifier.
2. Insert an audio source into input 2 or 3 of the master amplifier.
3. Connect the master amplifier to the slave amplifier using the connection cable.

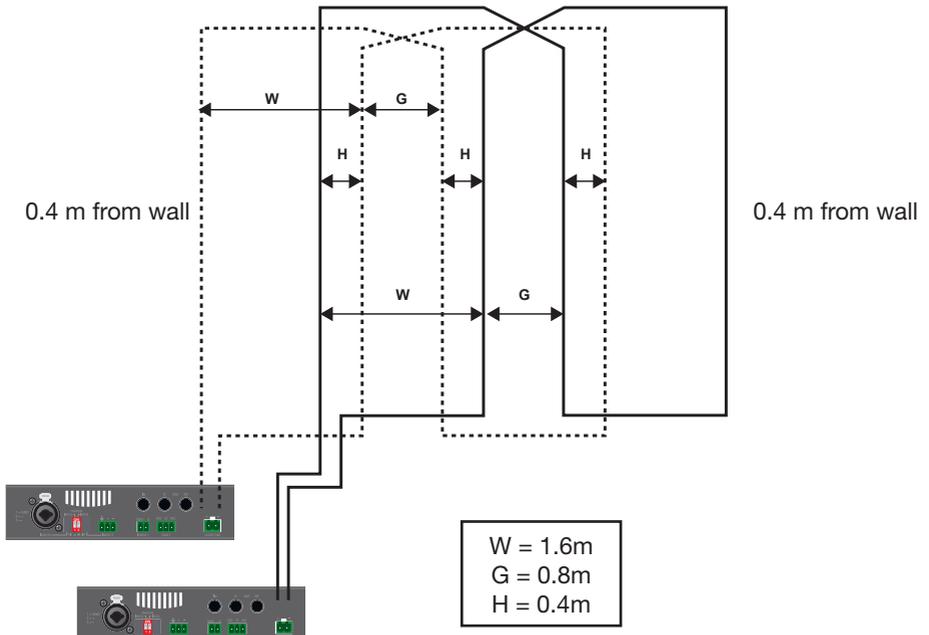
## 6 - Installation

### 6-1 Example of a perimeter layout

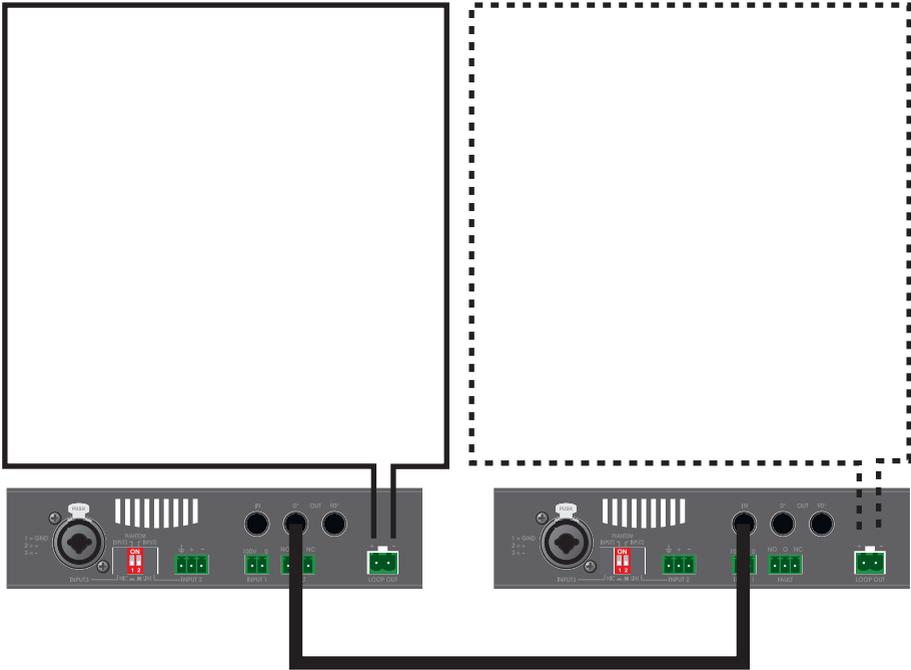


The installation consists of an electrical wire that runs through the perimeter of the room forming a loop. This loop is connected to an audio amplifier. The magnetic field generated by the large loop around the room will pass through the small loops in the prosthesis and, by the induction principle, the electrical signal present in the large loop will be found in the small loops. This transmits the signal from the audio amplifier to the prosthesis, which then returns it to the hearing impaired person's ear.

### 6-2 Example of the implementation of a hairpin system



**6-3 Example of the implementation of a large roofing system**



**6-4 Cable resistance table**

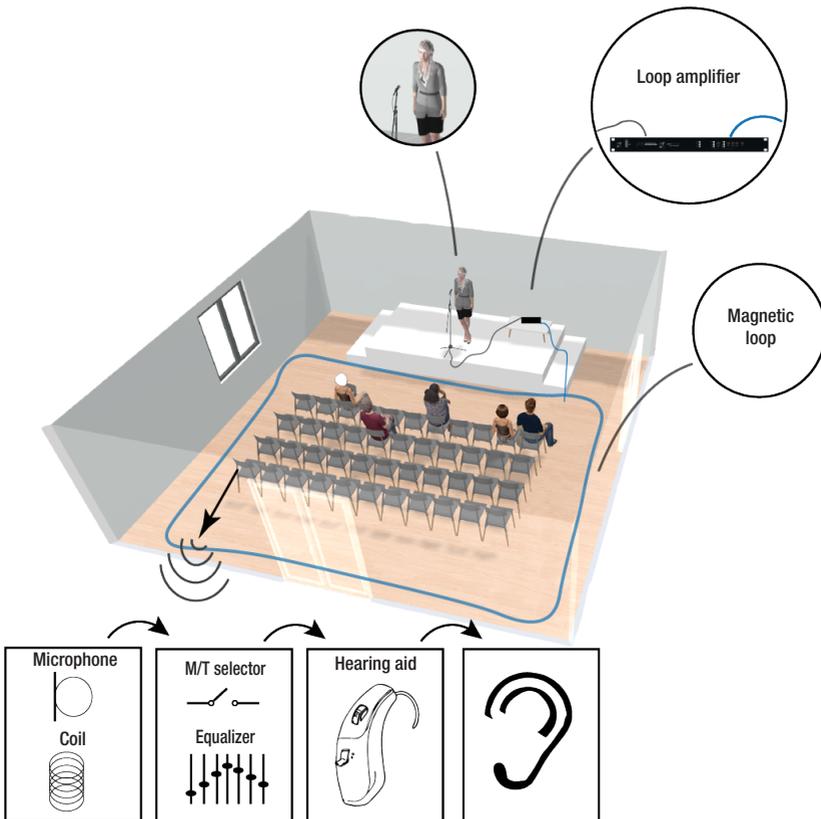
<b>Cross-section (mm<sup>2</sup>)</b>	0,5	1	1,5	2,5	4	Flat cable
<b>Resistance per 100 m (Ω)</b>	3,45	1,75	1,15	0,69	0,43	0,91

6-5 Operation

The loop wire is connected to an audio amplifier. The hearing aid has a coil, often called a "T" or "T-coil", which is placed inside the hearing aid and consists of a wire forming turns. The magnetic field generated by the large loop will pass through the small loops in the prosthesis and, by the induction principle, the electrical signal present in the large loop will be found in the small loops. This transmits the signal from the audio amplifier to the prosthesis, which then returns it to the hearing impaired person's ear.

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 earring 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 M position makes it possible to perceive the sound thanks to the acoustic pressure as a microphone, while the T position (T for telephone) directly receives the audio signals transmitted by induction via the integrated coil. Some prostheses combine these two modes of operation by the MT position. It allows the hearing impaired to perceive both ambient noise and signals transmitted by induction.



## 7 - Technical specifications

### BM-A250

### BM-A1000

#### Inputs

Audio inputs	3 inputs : x2 Line/ x1 microphone - 100V	
Type	Phoenix and or Neutrik Combo	
Power supply	12V 2mA	
Sensitivity	-50dB micro, +40dB 100V, -10dB ligne	
Slave input	-	6.35mm Jack plug
Priorité	Entrée 100V	

#### Power supply

Type	Integrated
Voltage	230V (120V optional) 50/60 Hz
Power	300VA
Power consumption	6W

#### Audio Specifications

Metalic loss	0 à 3 dB / octave
Automatic gain control	AGC speech optimised Dynamic > 36 dB
Bandwidth	80Hz à 9.5kHz

#### Output

Output voltage	35V rms (50V pK)	
Loop impedance	1.5Ω to 3Ω	0.5Ω to 3Ω
Peak current	8A	15A
RMS current	5A RMS	10A RMS
Couverture maximale	250 m <sup>2</sup> (10 x 25 m)	1000 m <sup>2</sup> (20 x 50 m)

#### Additional functions

Default	« protect » LED display
Checking (Synthesis failure)	DC current too high - Open loop - Thermal protect
Relay	NO / NC relay failure

#### Size (mm) and weight

L x H x D	483 x 44 x 215 mm
Weight	2,47 Kg

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