

**Holosonic Audio Spotlight -
“Beam sound to your listeners and preserve the quiet”**

Add sound and preserve the quiet

An audio induction loop is a way of transmitting sound through a simple wire loop to a suitable receiver. They are used most frequently to help hearing aid users listen to a sound source more clearly where there is background noise in a room.



INDUCTION LOOP

QUESTIONS & ANSWERS

What is an Audio Induction Loop? Ampetronic UK

An audio induction loop is a way of transmitting sound through a simple wire loop to a suitable receiver. They are used most frequently to help hearing aid users listen to a sound source more clearly where there is background noise in a room.

LOOP DESIGN OVERVIEW

In order to design a viable and useful loop system, the original data upon which the system is designed, must be accurate and complete. The complexity and amount of equipment required to drive the loop system depends to a great extent on the size of area to be covered as well as the building construction. Large amounts of metalwork contained within the loop area, especially if such metalwork is formed into closed electrical paths ie circles or other connected shapes,

will tend to drain energy out of the loop system. In such cases, specialist loop design and more amplifiers will be required to overcome these losses.

A further complication is that the losses due to metalwork are frequency related. This is best described as analogous to listening to the Hi-Fi with a thick blanket covering the front of each speaker – the sound will be muffled and indistinct.

Compensation (Metal Loss Correction) can be applied to the loop systems to overcome this effect by lifting the high frequencies, but much more power will be needed to lift the whole signal to an adequate level.

Loop systems are governed by internationally agreed standards that precisely define how strong the magnetic field must be to allow a hearing aid user to hear well, clearly and without distortion (the hearing aid's loop reception is governed by a compatible standard). Achieving this precise field strength across the area of intended coverage is what Ampetronic do as part of the design process by using custom analysis software.



INDUCTION LOOP

QUESTIONS & ANSWERS

LOOP SPILL ISSUES

Perimeter loops typically propagate a magnetic field up to four times the width of the loop itself and hence signals can be heard for considerable distances. If this causes problems relating to confidentiality or adjacent room spill (horizontal or vertical), then special loop design can reduce the spill distance to a couple of metres or less. Where there is a need to restrict “spill” or the distance outside of the loop area where the signal can still be heard, special design is required. Locations such as adjacent rooms (whether horizontally or vertically close) or areas where confidentiality is an issue, need a low spill loop design..

LOOP TYPES

Perimeter Loop - The simplest type of loop to understand is a perimeter loop. This usually consists of a single turn of stranded wire which runs around the edge (or perimeter) of the room to be equipped, with the two ends connected to the loop amplifier output terminals.

Cancellation Loop – Is a perimeter loop arranged with a (usually asymmetric) fig 8 shape. Adjusting the size and shape of one end of this type of loop can control spill (leakage of magnetic signals into unwanted areas) quite effectively.

Phased Array Loop – Consists of two loop arrays overlaid on top of each other and is used to overcome loss due to metalwork and to control spill. Each array normally has between two and six (but can be more) sections looking something similar to the prongs of a fork (but not wired in the same way). It is the precise overlap and relationship between the two arrays that minimises spill into adjacent areas. This design of loop can also be used to compensate for losses in magnetic signal strength due to metalwork contained within the loop area.

Counter Loop

Is a special multi turn coil designed to fit below a counter and is fitted vertically.