

## Points to Consider When Installing Large Amplifier Loops

1. First of all, you have to secure sufficient signal strength from the input signals, for example a microphone. This "input volume" is adjusted with the respective adjustment knobs marked "IN1", "IN2" and "IN3" located next to the input sockets. When adjusting this input volume, the output volume (loop current) must be set to minimum. The correct input level must be set for every input signal separately. The correct level is reached when the "IN" LED on the front lights up. Start with the 1 kHz signal and adjust the signal strength so that the AGC LED lights up.
2. Adjust the output level loop current adjustment by turning up the "Loop Current" knob on the rear side to a level at "12 o'clock". Measure the magnetic field level 4' from the floor. If it's too weak, turn it up more, if it's too strong, turn it down and measure again.
  - The loop monitor (ear phones outlet volume control) only adjusts the sound level in the ear phones jack and has nothing to do with loop current.
  - The adjustment knob on the front is never used for setting the level. It is only a volume control for the headphones output and has nothing to do with setting the level of the loop.
3. It is possible get a rough indication of the sound level (strength) by listening with a loop receiver, or with a hearing aid with telecoil on, but to assure a correct measurement you will need a Field Strength Meter (which can be purchased from [www.hearinglosshelp.com](http://www.hearinglosshelp.com)).
4. Things you can check (with a Field Strength Meter) in order to get better frequency response:
  - Try to start at -12 dB (100 ma/m) @ 1kHz. The magnetic field strength should reach 0 dB with limits of +/-3 dB for all measured frequencies.
  - You often get too high a result in the low frequencies (below 1 kHz). The reason is our AGC doesn't react strongly to low frequencies to prevent "pumping" speech where low frequency sounds, which are present in normal speech, are constantly regulated. Other manufacturers use a different AGC algorithm where low frequency sounds are processed by the AGC, creating a sound level in the loop that constantly changes up and down (pumping).

5. Generally a 2-turn loop gives better field strength, but at the same time, in the case of a large loop, it gives a somewhat lower high-frequency response.
6. Telecoils in Hearing Aids frequently differ. The correct listening volume is set individually by the volume control in the HA (if applicable). The correct amplification of the Hearing Aid, both the internal microphone and the T-coil, is set by an audiologist. If the loop is adjusted according to the IEC standard everyone should be able to hear.
7. Always begin system set ups with all input and output controls set at MINIMUM, then slowly increasing the levels until a proper signal is attained in the center of the loop.
8. Due to "dead spots" that occur directly above and below the loop wire, the sides of the installed loop wire should not be situated directly above or directly below seating within the listening area. The sides of multiple loop wires must meet in areas where there is no seating, such as aisles.
9. The loop wire must not be run in continuous contact with metal, either directly above or below the loop wire. Loop wires may cross metal ceiling framework, and may briefly run behind metal furniture. At least 70% of the total loop must be free of metal obstructions.
10. At least 70% of the loop wire should be installed in the horizontal plane.
11. The loop wire must completely encompass the listening area. The height of ceiling loop wires must not exceed 10-12 feet above the floor of the listening area.
12. Floor level loop wires must not be more than 3-4 feet below the floor.
13. Avoid running the loop wire in close proximity and parallel to telephone lines, microphone cords and video feeds. Maintain a distance of at least 12".
14. The use of dynamic microphones or musical instruments with magnetic pickups can result in equipment-damaging feedback. To avoid this, use condenser microphones and/or keep dynamic microphones & musical instrument pickups at least 10 feet from the loop wire.

## **Determining the Best Loop Set-up**

Our general recommendation for all standard (PLS, not SLS) loops is to use a twin wire (two wires), then you can either:

- A. Connect the wire as a 2-turn (two wires) loops
- B. Connect the wire as a 1-turn loop (and not use the second wire)
- C. Connect the wires as a longer 1-turn loop (parallel connection of the twin wires).

Note: when deciding whether to use A. or B. (above), connect the wire as a 2-turn (two wire) loop (A) first. Measure the field strength. Then disconnect the 2<sup>nd</sup> wire and test as a 1-turn (one wire) loop (B) and measure the field strength again. If the 1-turn loop signal (B) is stronger, leave the 2<sup>nd</sup> wire unattached.

You can then attach the ends of the 2<sup>nd</sup> wire to the ends of the 1<sup>st</sup> wire thus creating a "parallel connection" (C) and compare the signal strength to the stronger of (A) or (B).