**Generic Assistive Listening UK Specification**

**Hearing Loop Systems in Lifts**

**UP60010-2 UK**

This document is a generic specification for any Hearing Loop System in a Lift.

The text may be used in part or in full for any purpose regarding Hearing Loop systems in Lifts.

While the text aims to be generic, you will need to modify sections to be specific to your application:

* The introduction should state your requirements for loop locations and areas

You may also have specific requirements to add or modify in the following areas:

* Section 1.4: add any specific Audio Inputs that are needed
* Section 1.6 : add any specific Installation requirements
* Section 1.8 : add any specific requirements for post installation maintenance or training of operating staff

This version is intended for use in the United Kingdom and related areas.

Any text in orange is suggested or example requirements and should be amended or deleted as appropriate.

**1. Hearing Loop Systems (HLS)**

Permanently installed Hearing Loop Systems (HLS) should be provided to allow passengers who experience hearing loss to communicate with staff external to the lift, to hear recorded messages and live announcements as appropriate.

**1.1 Compliance**

The systems or components thereof shall comply with relevant parts of the latest versions of:

* IEC 60118-4 (also referred to as BS EN 60118-4)
* IEC TR 63079 (also referred to as BS 7594)
* The Equality Act 2010
* BS 62489-1
* EN 81

**1.2 System design**

HLS systems should be specified and designed by an experienced specialist to take account of the effect of lift structure ~~w~~here applicable.

A HLS specialist should be consulted if there is a concern about construction-related signal losses.

The Contractor shall, at the earliest opportunity in the project:

* Provide evidence that the field strength of the proposed systems will meet the requirements of IEC 60118-4, whilst taking account of any metal within the lift car structure.
* Where necessary, the effect of metal shall be assessed by site survey and tested using trial loops on the relevant vehicle, carried out by a competent test specialist.

**1.3 HLS loops**

Loops connected to the hearing loop system shall meet the following requirements:

* Loop wire containment shall be of non-metallic construction or must not create any closed circuits and only earthed in one position. This restriction does not apply to the loop feed wiring between a loop amplifier and the start of the loop itself.
* All cabling should be concealed within the fabric of the lift, unless specified otherwise or when using a loop solution that is designed and intended to be in the surface / visible.

**1.4 Audio inputs**

Audio inputs should be defined by the audio communication provided in the lift and the requirements of the listeners.

The audio provided to the HLS must always provide an improvement in signal to noise ratio over the acoustic sound received from audio communication within the lift.

The Contractor is required to:

* Provide a line level connection from the emergency communication system (e.g. auto dialler or intercom) to the HLS
* Provide suitable input connection into the HLS from audio communication facilities in the lift

The feed from the auto dialler should not vary in level with loudspeaker volume adjustment. In some cases, this can be the only input, however other audio communications such as automatic announcements, building PA, or other systems may also be provided.

**1.5 HLS drivers**

Each HLS must use a dedicated hearing loop driver meeting the following general requirements as defined below.

* True ‘current drive’ output
* Frequency response from 80Hz to 6.5kHz
* Automatic gain control (AGC) optimised for speech with a dynamic range greater than 36dB
* Metal loss correction with an adjustable gain slope range of at least 0dB to +3dB per octave
* Indication of audio signal activity on the input and output of the unit
* Rated current and voltage capable of driving the designed loop without clipping or distortion of the signal with full power bandwidth up to at least 1.2kHz
* Capable of delivering a 1kHz sinewave at the rated current and voltage into a load for at least 20 seconds continuously without damage to the unit or interruption of the output signal
* Input facilities of a type and connection suitable for the intended audio inputs to the system.

**1.6 Installation**
If the proposed contractor is not experienced with hearing loop or audio systems to the level required in order to competently install and commission these systems, then some or all of the work should be sub-contracted to a specialist with the necessary experience.

The contractor shall:

* Co-ordinate with other relevant contactors to ensure that all appropriate audio signals are connected to the hearing loop system and transmitted clearly.
* Wire and connect to all items of equipment in accordance with the manufacturer’s recommendations.
* Follow good practice to ensure that system design does not cause potential ground loops. Use galvanically isolated input connections (as provided) where appropriate.
* All wiring between loops and equipment locations shall be installed in appropriate containment.
* Following installation, the resistance of each loop circuit and isolation from electrical ground shall be tested and recorded. The Client shall have the opportunity to witness these tests.

**1.7 Commissioning**

All commissioning must be carried out using a true RMS, dedicated hearing loop field strength meter, that conforms to the requirements of IEC 60118-4, with a valid calibration certificate available.

Each complete system must be commissioned in accordance with IEC 60118-4 and a certificate of conformity clearly stating test results and performance against this standard must be issued for each HLS. The Client shall have the opportunity to witness these tests.

**1.8 Training and maintenance**

All systems, methods of use and routine maintenance checks must be demonstrated to the end user.

For each loop location a loop receiver shall be provided for operational staff to check and monitor the performance of the HLS system. The receiver shall have a headphone output, low cut filter and field strength indicators as required by IEC 60118-4.

Training shall be provided that enables operational staff to understand the proper use of the HLS and how to ensure that people can make use of the system effectively.

Operation and Maintenance manuals shall be provided which include ‘as fitted’ drawings, data sheets and instruction manuals for all items of hardware and operational instructions for the use and testing of all systems.