

Part Number AKM2

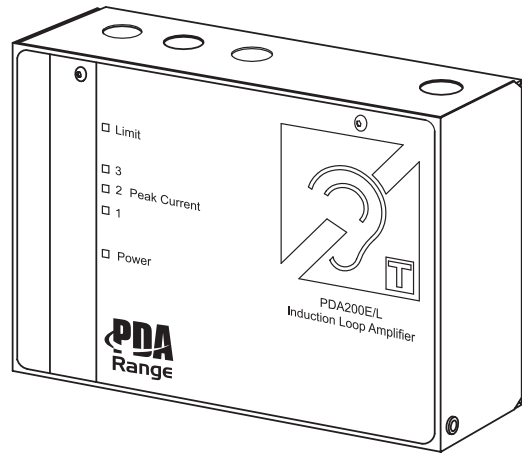
PDA200E/L Lift Loop Kit for Elevators



KEY FEATURES

The PDA200E/L Lift Loop Kit for Elevators (Part No. AKM2) is a cost-effective induction loop system that is suitable for use in lift cars designed for use with the hearing impaired. It provides the following features:

- Satisfies the requirements of the Disability Discrimination Act (DDA) and BS EN 81-70 (5.4.4.3 c)
- Fully compliant with the relevant parts of BS 7594 (when correctly installed) and BS EN 60118-4
- 2 line level inputs connect directly to the PDA200E/L induction loop amplifier; one input from the floor announcement system, one input from the emergency communication system
- Loop cable can be installed either on top, or in the suspended ceiling, of a lift car
- Internal tamper-resistant drive, level and tone controls can be manually adjusted to suit system requirements
- Two balanced/unbalanced line-level inputs
- Input peak (Limit), output drive (1, 2, 3 Peak Current) and power on (Power) LEDs
- Fully automatic compressor-limiter which maintains the loop signal to improve intelligibility
- Robust metal enclosure for mounting on the lift car
- Easy to fit with straightforward internal screw connectors allowing installation by a competent electrician
- Complete with installation kit, instructions and 'loop fitted' sticker.



AKM2 KIT

1 x PDA200E/L induction loop amplifier (direct connection of audio inputs from floor announcement speaker and emergency communication speaker)

1 x Accessory pack

Note: The AKM2 kit is supplied with 2 x 2 core screened cable as standard but the loop cable is not included. We recommend 1 mm² loop cable, i.e. one core of 1 mm² T&E, which is available from most electrical distributors with an order code of 6242Y.

What is an Induction Loop System?

Audio-frequency induction loop systems (AFILS) assist the hearing impaired by transmitting amplified sound, i.e. speech, music, etc. to hearing aids. Most hearing aids have a 'T' or 'MT' switch which allows them to pick up the electromagnetic signal generated by an induction loop system. The hearing aid converts this electromagnetic signal into sound suited to its user's specific hearing requirements, allowing them to participate more fully in general conversation, listen to announcements, etc. Unwanted and distracting background noise is also minimised.

AFILS comprise of the following system components:

- an audio source; in this case the floor announcement and emergency communication speakers
- an induction loop amplifier, i.e. the PDA200E/L
- a cable installed in one, or more loops around the area in which the AFILS signal is required, in this case above the lift car
- a receiver, i.e. hearing aid with a 'T' or 'MT' switch.

REGULATIONS AFFECTING AFILS

BS 7594 Code of practice for audio-frequency induction loop systems (AFILS)

This standard is a non-mandatory guideline for the design and installation of induction loops. It has a comprehensive guide to theory, as well as guidance for those considering the installation of AFILS in buildings for which they may be responsible. The calibration of field strength measuring devices is also included.

When setting out an induction loop circuit, consideration must be given to the listening plane, which lies at the median level of listeners' ears, about 1.2 m above finished floor level. Loops are often embedded in the walls but as the field gets stronger the nearer to the loop, this can cause disturbances to hearing aid wearers if they are seated around the perimeter wall. Placing the loop in the ceiling/void is acceptable although this requires more current for the same field strength. Wherever the location, all systems must be satisfactorily designed to provide what BS 7594 calls 'a sufficiently (but not excessively) strong, and uniform (useful) component of magnetic field within the required working area'.

The recommended field strength required is 0.1 amp/metre \pm 3 dB within the specified magnetic field. We advise a loop cable layout that is strong enough to provide signal cover for the entire lift car area that can be picked up by a hearing aid.

BS EN 81-70 Safety rules for the construction and installation of lifts - Particular applications for passenger lifts. Part 70: Accessibility to lifts for persons including persons with disability.

The aim of this standard is to specify the minimum requirements for the safe and independent access and use of lifts by persons, including persons with disabilities. Impaired hearing (deaf, hard of hearing) is included in the scope of the standard.

Clause 5.4.4.3 states that the 'emergency alarm device shall be equipped with visible and audible signals, integrated into the control panel'. The audible signals consist of a floor announcement speaker and emergency communication speaker. Clause 5.4.4.3 Part c) states 'an aid to communication an induction loop, for people with impaired hearing'. The audible signals shall have a sound level of between 35 dB(A) and 65 dB(A) adjustable to suit the site conditions.

Clause 6, subclause 5.4.3.3 states the 'Methods to be used to verify conformity to the requirements' include Visual Inspection, Measurement & Function tests/checks.

DDA The Disability Discrimination Act

The aim of the DDA is to stop discrimination against disabled people, including the hearing impaired. Under the Act, all UK service providers, i.e. companies or organisations offering goods, facilities or services to the general public, must make 'reasonable adjustments' to ensure they do not unlawfully discriminate against disabled people. Employers must also take measures to ensure that employees are not disadvantaged in the workplace.

Examples of 'reasonable adjustments' include the provision of auxiliary aids, such as induction loops systems, to enable a hard of hearing person to access goods, facilities or services where it is impossible or unreasonably difficult for them to do so. **Organisations that fail to meet their obligations under the DDA could face litigation.**

SATISFYING THE REQUIREMENTS OF BS EN 81-70, BS 7594 AND THE DDA

Refer to Figs 1, 2 & 3.

To comply with BS EN 81-70 & BS 7594 regulations and DDA legislation it is necessary to install AFILS in lift cars designed for use with the hearing impaired. The PDA200E/L Lift Loop Kit, for Elevators (Part Number AKM2) assists in meeting the above requirements. The induction loop amplifier has two inputs for direct connection from the car lift announcement and emergency telephone systems.

The more turns of loop cable, the greater the magnetic field that can be generated for the same current, but also the greater the attenuation of higher frequencies. Therefore, we recommend two different loop cable options to provide the required field strength in the lift car area. Either 6 turns of 1mm² loop cable installed on top of the lift car, or alternatively 2 turns of 1mm² loop cable installed in the suspended ceiling of the lift car. To increase the field strength, the loops have to be in series and installed approx. 150 mm from the edge of the lift car (the electromagnetic field will be degraded if installed too close to the walls of the lift car).

In order to measure the field strength generated by the AFILS, a FoSmeter (400 mA Magnetic Field Strength Meter) can be used as a test tool. This equipment is used to measure a known input into the amplifier, e.g. a pink noise generator. The gain of the amplifier can then be adjusted to suit the lift car area. This allows you to accurately set up and maintain AFILS for compliance with BS EN 60118-4 Magnetic field strength in AFILS for hearing aid purposes.

Fig 1 - Typical PDA200E/L Induction Loop Installation (using the AKM2 kit)

The floor announcement system's speaker and the emergency communication system's speaker provide two separate line level inputs (A & B) to the PDA200E/L induction loop amplifier. Two different loop cable options are shown below.

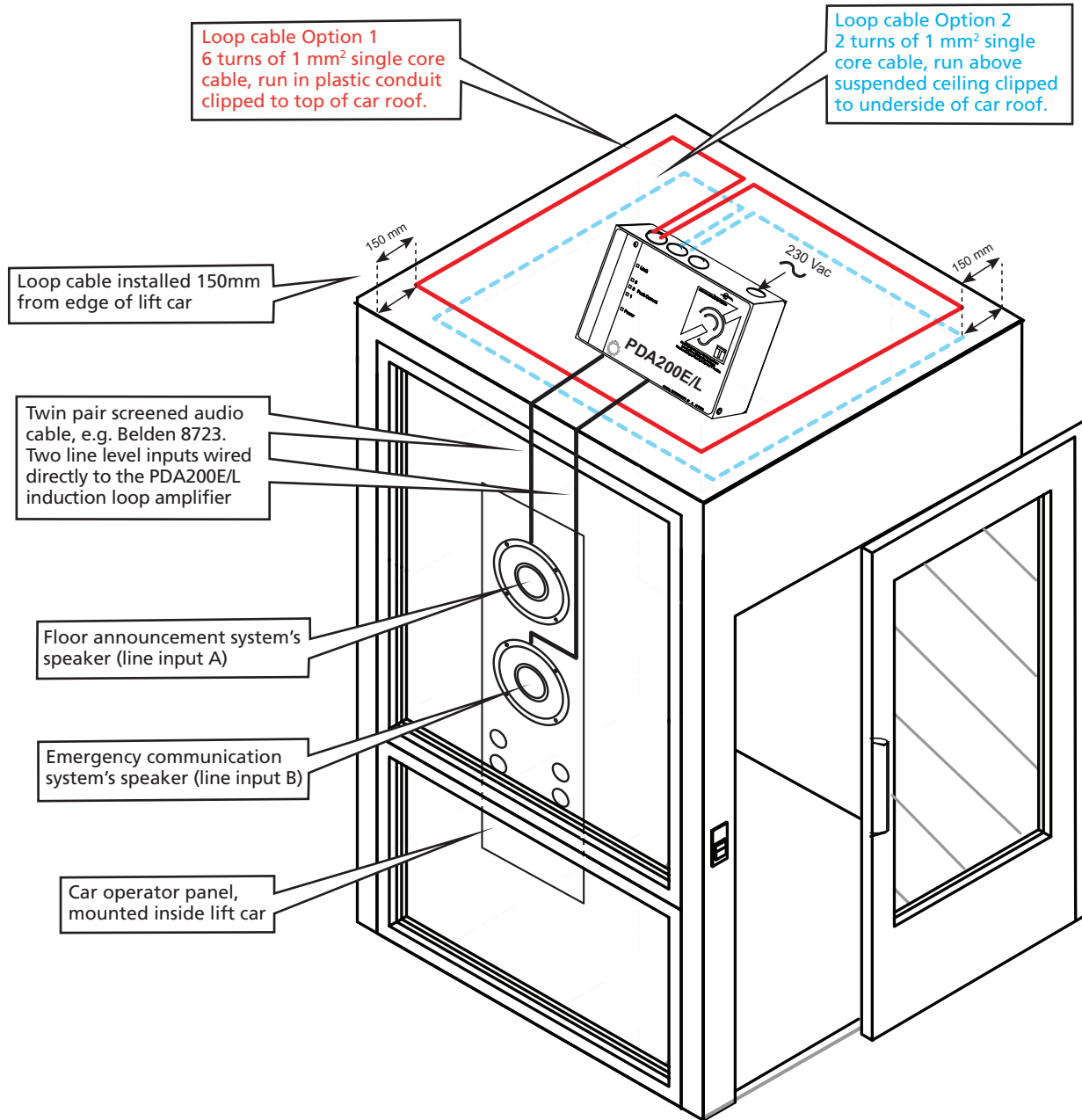


Fig 2 - Typical PDA200E/L Induction Loop Wiring Overview

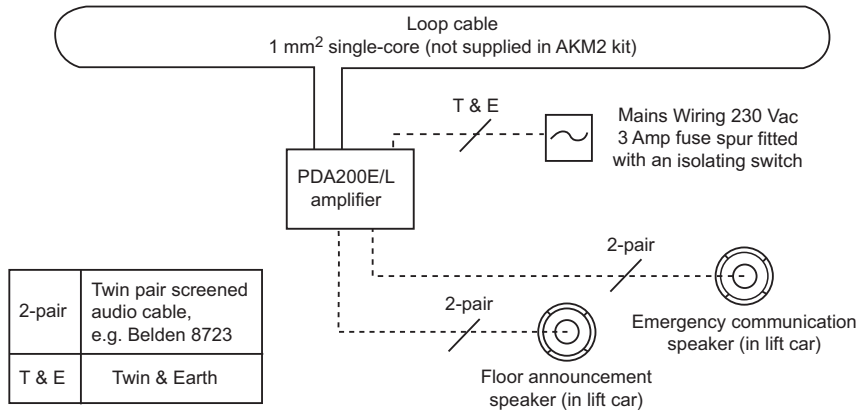


Fig 3 - Typical PDA200E/L Induction Loop Wiring Detailed

The floor announcement speaker and the emergency dial speaker provide two separate line level inputs to the PDA200E/L induction loop amplifier using standard two-pair audio cable such as Belden 8723.

