

## System setup and testing

With the system physically in place perform the following:-

### MICROPHONE SET-UP

While stood or sat in the position that the counter/reception staff would normally adopt, talk in normal conversation tones to the 'imagined' hearing aid user. Adjust the microphone signal level control on the front of the ML1 until the input signal indicator flickers red when speaking, i.e. with peaks in the audio signal.

### AUDIO LINE-IN (OUTREACH PLATE) SET-UP

The level of the audio source(s) connected to the ML1's line level input (if used) can be adjusted using the rear line level control. The control should be adjusted so that the amplifier's front input signal indicator illuminates red with peaks in the audio signal.

Note: if both the front microphone input is used for speech and the line level input is used for background music, the line level may have to be reduced so as not to swamp out the front microphone speech.

### LOOP DRIVE SET-UP

The ML1's rear loop drive control adjusts the strength of the field generated by the induction loop. An approximate guide of the field strength can be ascertained by noting the colour of the ML1's loop current indicator. When lit orange, a field strength of approximately 100mA-1 is reached 1 metre above the centre of the loop.

We strongly recommend that a loop listening device (such as an RXTI2) is used to check the system is working correctly and to confirm that the audio generated by the loop is of an acceptable quality (the alternative is to ask a hearing aid user to test the system for you).

For more precise measuring of the induction loop field, a magnetic field strength meter (part no. AHHM) can be used in conjunction with a pink noise generator (part no. PNGN). Contact your distributor for further details.

## Periodic checking

Once up and running it is essential for compliance with the Disability Discrimination Act that some form of regular checking of the performance of the system is carried out. Placing the ML1 so that the operator can see its indicator lights is recommended, as is the use of an RXTI2 loop listening device to check the system is functioning correctly on a regular basis.

Please note: The ML1 is designed to run continuously and it is perfectly normal for its front plate to become warm to the touch during operation. Abnormal temperature rises are protected by thermal cut-outs which are built into the unit's circuitry.

*© Errors and omissions excepted. These instructions are general and cannot be considered to cover every aspect of audio-frequency induction loop amplifier installation. No responsibility can be accepted by the manufacturer or distributors of this equipment for any misinterpretation of an instruction or guidance note or for the compliance of the system as a whole. The manufacturer of this equipment operates a policy of continuous improvement and reserves the right to alter product specifications at its discretion and without prior notice.*

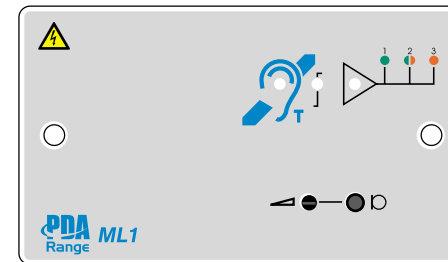
# ML1



## MINI INDUCTION LOOP AMPLIFIER

## INSTALLATION INSTRUCTIONS

***This product must be installed by a suitably skilled and technically competent person. Please read ALL of these instructions carefully prior to installation - failure to do so may result in poor performance and inadequate results for the user(s).***



The ML1 is a compact audio-frequency induction loop amplifier capable of generating a loop listening field of approximately 1.2m<sup>2</sup> if used with the TX2 counter loop (supplied in the MK1/K kit), making it ideal for restricted person to person contact in areas such as banks, post offices, ticket counters, etc.

Designed to fit on a standard UK 25mm double gang back box, it has a self-contained mains power supply, a microphone input, a balanced line level input and a selection of indicators and controls, as detailed inside this manual.

The amplifier is available either on its own or as part of the ML1/K counter loop kit which comprises a microphone and pre-formed counter loop - the basic components required to create a counter loop system suitable for use in most applications.

In addition to being used as part of a counter loop system, the ML1 is capable of covering rooms up to 20m<sup>2</sup> (approx. 4.4 x 4.4 metres) using a loop made from standard four core burglar alarm cable wired as four turns.

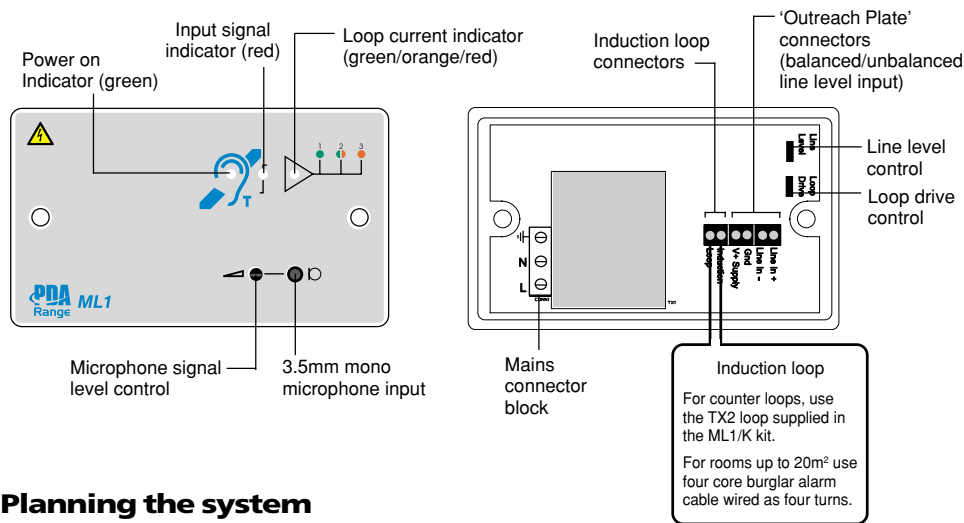


### What is an induction loop system?

Induction loop systems allow hearing impaired people to hear more clearly. Most hearing aids have a 'T' or 'MT' switch which allows them to pick up the electromagnetic field generated by a telephone earpiece. This signal is converted by the hearing aid into a sound suited to its user's specific hearing requirements. An induction loop system uses this same principle but generates a much larger magnetic field than that created by a telephone earpiece via a 'loop' of cable. Any hearing impaired person positioned within the loop can hear the loop signal by switching their hearing aid to the correct position.

## Familiarization with the ML1 unit

Below is an overview of the indicators, controls and connectors on the ML1 amplifier.



## Planning the system

Careful planning of the induction loop system prior to installation is essential. Please refer to the diagram and siting information below for best results.

### THE ML1 AMPLIFIER

The ML1 should be sited close to where the speech pick-up microphone is to be located. If possible, its indicators should be visible to the member of staff using it so they can check it is functioning correctly. Ensure the microphone's lead will reach the input socket on the front of the ML1.

### MICROPHONE PLACEMENT

The microphone supplied in the ML1/K kit is omni-directional and will pick up sounds from all around it. To help reduce background noise, it should be sited near to the person speaking and pointing in their general direction. Avoid mounting it alongside sources of unwanted noise such as the cooling fan on a computer or a ringing telephone.

### INDUCTION LOOP PLACEMENT

The pre-formed induction loop supplied in the ML1/K kit opens out into a 700mm x 700mm square and includes a 2m feeder cable for direct connection to the rear of the ML1 unit. It should be positioned so any hearing impaired person visiting the counter naturally stands in front of it while in conversation (see illustration above) and is ideally fixed as follows:-

- (1) Bend the 'squared' loop at a right angle half way down its length.
- (2) Secure half the square to the underside horizontal surface of the desk and run the other half down the inside of the back vertical of the desk.



Another option is to fit the induction loop above a suspended ceiling provided it is low enough to allow an adequate field strength to be reached at the hearing aid. Again position the loop so that it is central to where the hearing impaired person would naturally stand.

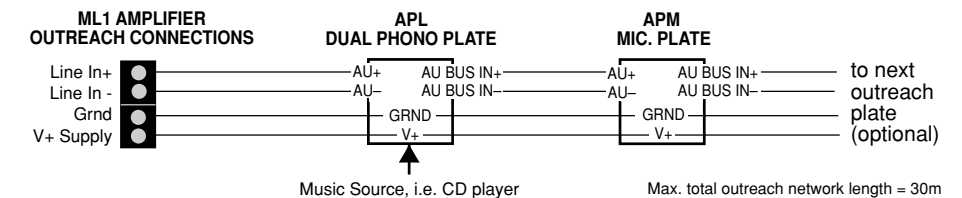
For applications where the ML1 is to be flush mounted and the induction loop is to be surface mounted, a wall-mounting loop connector plate (the APT) is available. If utilized, run a short cable of up to 1.5mm CSA under the fixing surface from the ML1 to the APT plate.

### MULTIPLE COUNTER LOOPS

If multiple counter loops are required in close proximity, it is possible that the 'field' generated by one system may be picked up by a person who is standing at the next. Adjust the field strength, loop shape and position to avoid this.

### OUTREACH PLATE AUDIO INPUT EXTENSION SYSTEM CONNECTORS

The ML1 has the facility to receive multiple balanced or unbalanced line level signals via its 'outreach plate' audio input connectors. Outreach plates particularly suited for use with the ML1 include the APL dual phono line level plate (allowing the connection of background music sources such as CD players) and the APM omni-directional plated microphone (for 'expanding' the speech coverage of the system). Typical wiring is shown below:-

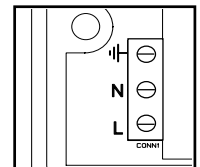


### First fix

The ML1 MUST be sited internally in area which is NOT subject to conditions likely to affect its performance, e.g. damp, salt-air, water ingress, extremes of temperature, physical abuse etc. It should be fitted to a 25mm deep back box which is securely fixed to the wall. The back box, in conjunction with the front plate, comprises a fire compartment and must be made of a flame retardant material with any apertures sealed off so as not to compromise its integrity.

### MAINS WIRING

**The ML1 is a piece of Class 1 equipment and, as such, any metal parts used during installation (i.e. metal back box) MUST be earthed. All mains wiring should be provided in accordance with the current edition of the IEE Wiring Regs, 16th Ed. (BS 7671 1993) or in accordance with the relevant national wiring rules.**



The general requirement for the Mains supply to the ML1 is fixed wiring, using three core cables of not less than 1.0mm<sup>2</sup>. This should be fed from an isolating switched fused spur, fused at 3A, which is appropriately marked and secure from unauthorized operation. Live and neutral should be connected to the L and N terminals respectively. If a plastic back box is used, the earth connection should be made to the terminal marked  $\text{||}$  at the terminal block labelled CONN1 on the ML1. If a metal back box is used, the earth connection must be made to the earth bonding point on the back box. All external wiring brought into the unit must be adequately insulated with PVC or Neoprene.

### EXTRA LOW VOLTAGE WIRING

All low voltage wiring coming into the ML1 must be carefully planned before starting the job. Always segregate low voltage wiring from Mains wiring. The Mains supply must be brought into the ML1 via its own entry which MUST NOT contain any low voltage cables.