



# AMPETRONIC CLD1 Small Area and Counter Loop Driver Installation Guide

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## AMPETRONIC CLD1 Small Area and Counter Loop Driver

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## Box Contents

- 1 x CLD1
- 1 x AC to 12V power adapter DC
- 1 x A6 Induction loop logo
- 1 x 'CLD1 Installation Handbook'
- 1 x Loop coil and fixings (if requested)
- 1 x Microphone option (if requested)



This symbol is used to alert the user to important operating or maintenance instructions.



The Lightning bolt triangle is used to alert the user to the risk of electric shock.

## SAFETY

1. It is important to read these instructions, and to follow them.
2. Keep this instruction manual in an accessible place.
3. Do not install this equipment near any heat sources such as radiators, heating vents or other apparatus that produces heat.
4. Refer all servicing to qualified personnel.



**WARNING:** Disconnect power before servicing or replacing fuse.

5. The amplifier generates some heat during normal operation and needs adequate ventilation.



**WARNING:** Do not install the apparatus in a fully enclosed space.

6. No objects filled with liquids, such as vases, shall be placed on the apparatus.



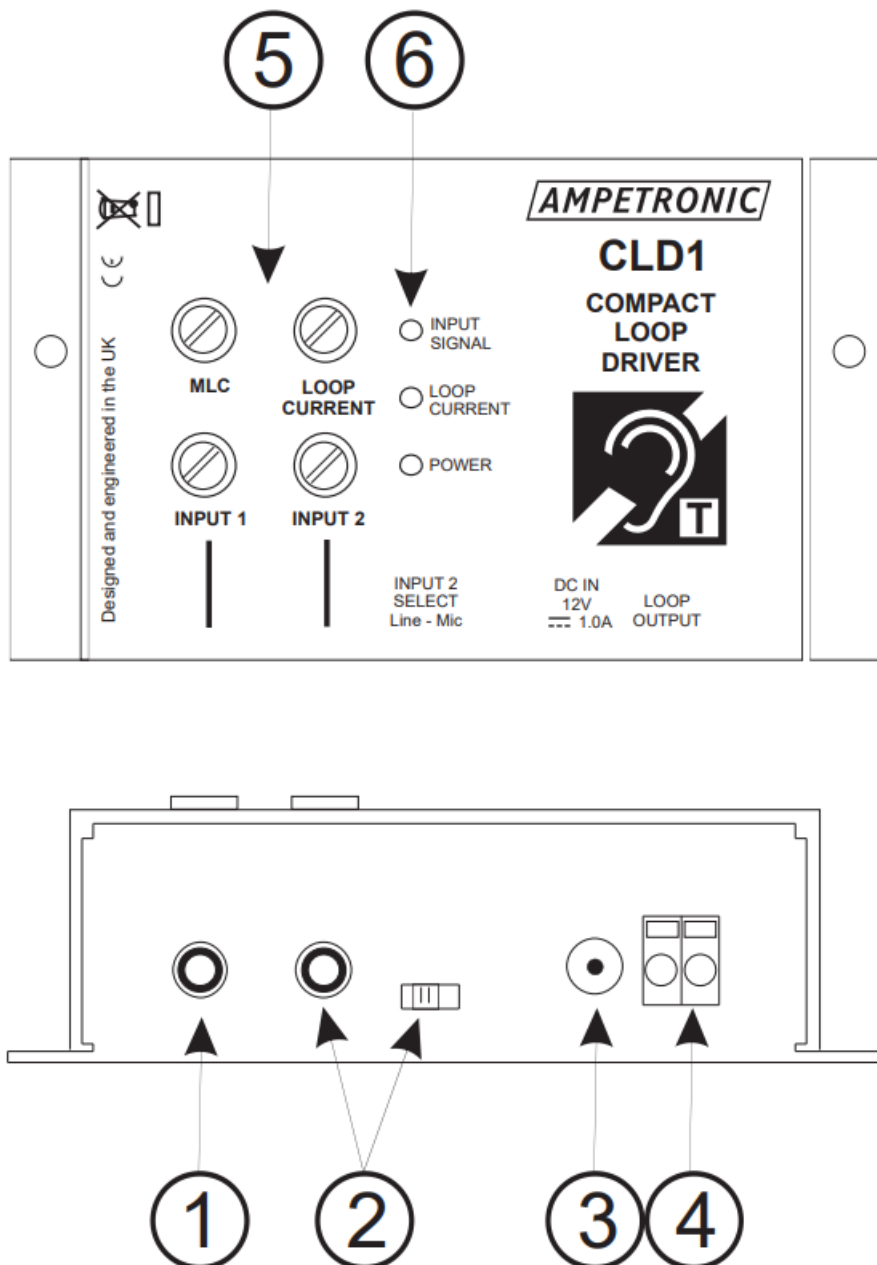
**WARNING:** Do not expose to dripping or splashing.

7. Clean only with a dry cloth.

## INTRODUCTION

The CLD1 Compact Loop Driver has been designed primarily as a high quality stand-alone hearing loop driver for ticket counters, banks or other point of sales systems.

It is available in kits with a microphone and standard multi turn loop coil and comes preset to drive an optimal field for these applications where little to no metal content is present in the desk or counter. For counters with significant metal framing or cladding a more powerful amplifier may be required or a loop installed in the floor or ceiling in front of the counter. The CLD1 can also drive small area perimeter loop systems or more customised integrated loop coils. Contact Ampetronic for advice.

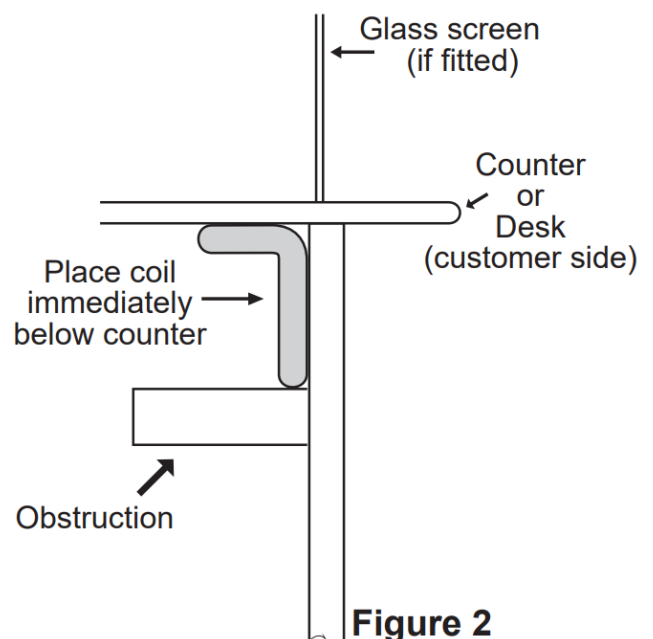
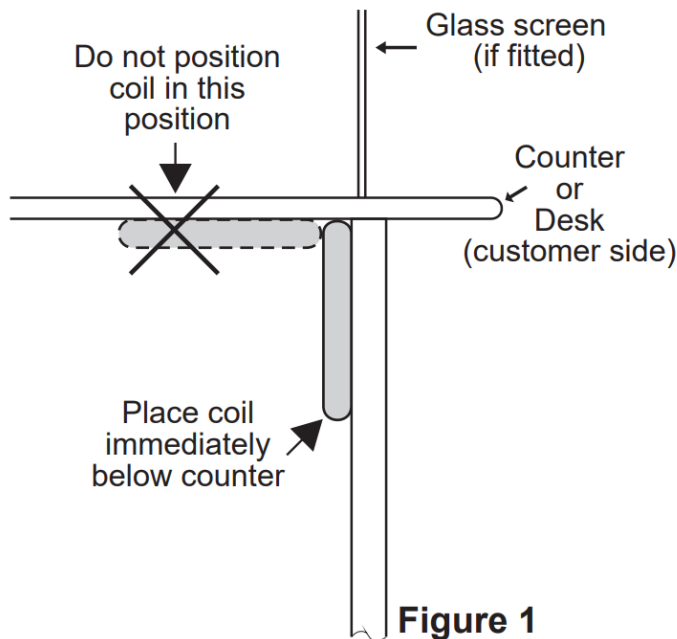


The CLD1 features include:

- ① Microphone input – for use with unbalanced electret microphones.
- ② Selectable microphone or unbalanced line level input. (Mic' mode as above)
- ③ 12V input – suitable AC power adapter supplied. DC
- ④ Loop output with spring clamp connections.
- ⑤ Individual level controls for each signal input, MLC (Metal Loss Correction) style tone control and loop output.
- ⑥ Separate indication of power, input signal and loop current for easy set up.

## QUICK START

1. Fit CLD1 to a panel or wall under the counter, away from contact by the system user. Ensure the cables are positioned such that they are not vulnerable to damage and are unlikely to be snagged or disconnected from the unit.
2. Fit either the loop coil (provided) or perimeter loop:
  - Unfold the loop coil. Fit to the counter ideally approximately 250mm behind the front edge of the desk. The top of the coil should be between 900mm and 1000mm above the finished floor level to provide compliant signal to both seated and standing height users. The coil must be installed either vertically or with up to 50% of the coil folded away from the customer side.

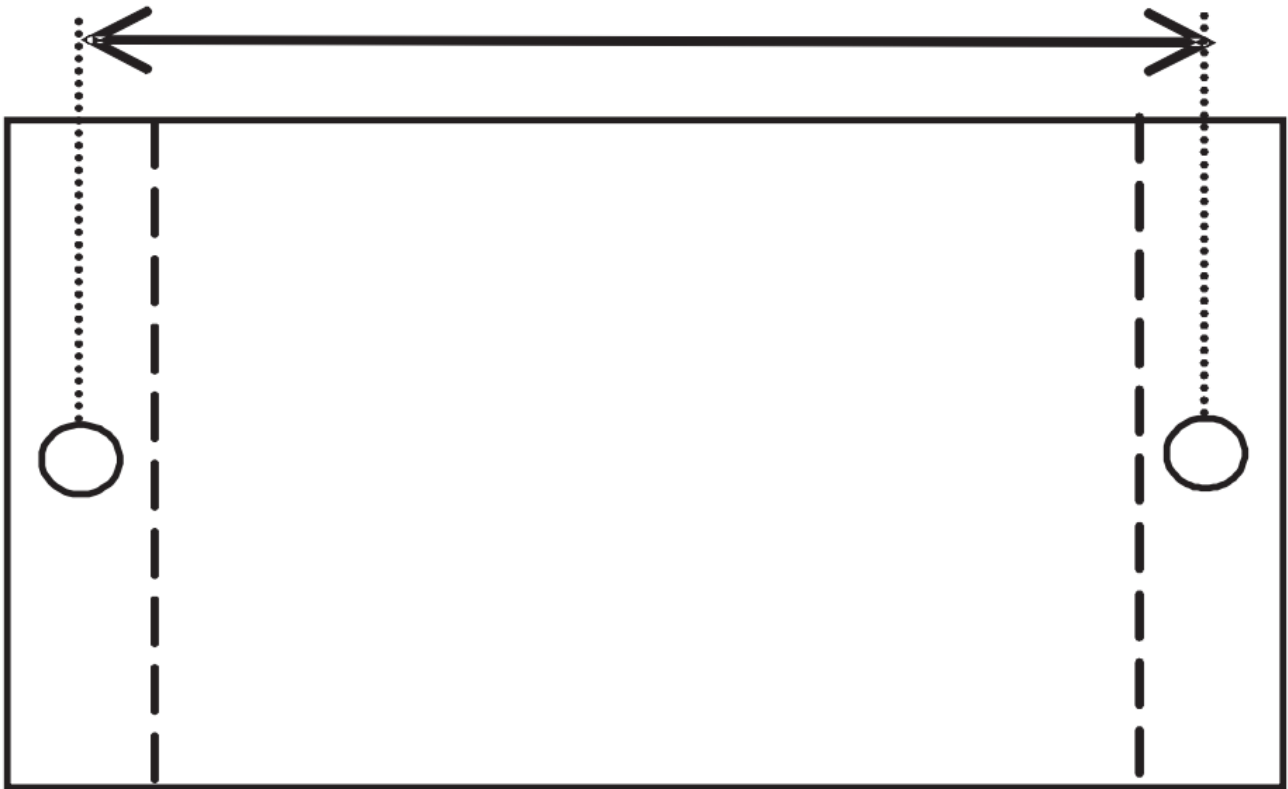


- If a perimeter loop is to be used, the feed wires to the amplifier should be twisted together. See 'Designing Induction Loops handbook' for details.
3. Connect the loop wires to 'LOOP OUTPUT' terminals. Polarity is not important. To open the spring clamp terminal – insert a flat bladed screwdriver into the small "tab" above the hole. Push gently until the hole opens.
  4. Connect signal to 'INPUTS 1 and 2' as required (see: Connection details).
  5. Position 'INPUT 2 SELECT' slide switch for Line or Mic as required.
  6. Connect 12V adapter to 'DC IN' socket on the unit. Connect adapter to AC DC supply.
  7. Switch on external AC power: Check green 'POWER' LED illuminates.
  8. Apply input signal (e.g. by speaking into mic') and if required increase corresponding 'INPUT 1 or 2' control until the green 'INPUT SIGNAL' LED begins to light.
  9. Repeat item 9 for the second input (if used). Only apply one audio signal at a time when setting up the system.
  10. If required adjust the 'LOOP CURRENT' control until the yellow 'LOOP CURRENT' LED lights at peaks in the input signal.
  11. Test the performance of the system using a loop receiver or field strength meter and adjust 'MLC' & 'LOOP CURRENT' to achieve acceptable performance.

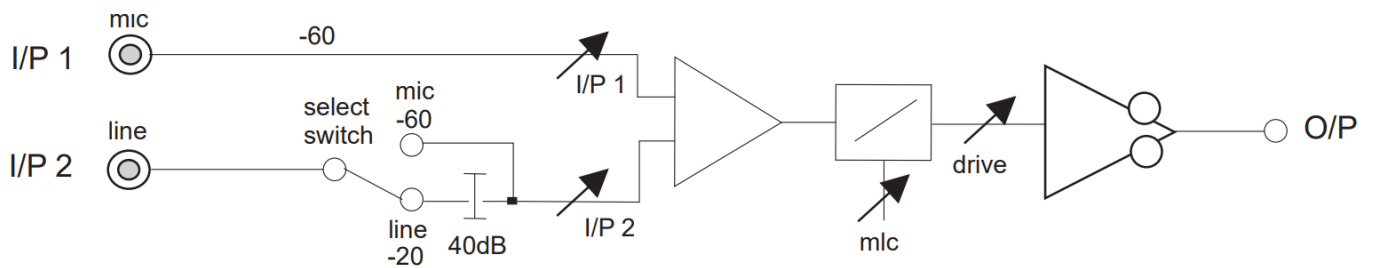
**Note:** Once the 'LOOP CURRENT' control is set, do not adjust it again.

## MOUNTING DETAILS

# Fixing hole centres 117mm apart

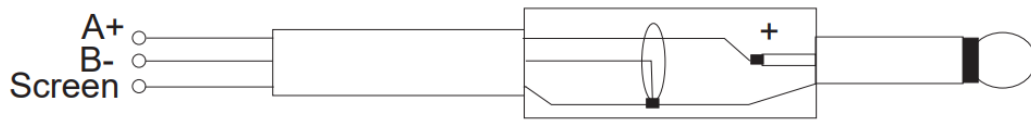


## BLOCK DIAGRAM

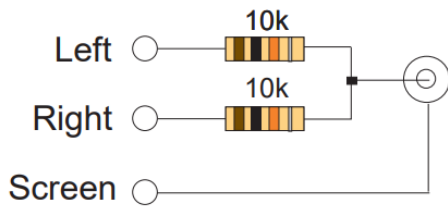


## CONNECTION (LINE LEVEL INPUT)

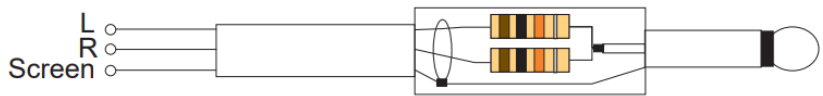
Connect screen and -ve  
signal lead together



## Stereo Source



Ideally fit the two 10k, ¼W, summing  
resistors within the body of the jack plug



Keep all wires very short

## INSTALLATION

### Tools

You will require the following:

- Small flat bladed screwdriver
- Screws, fixings and appropriate tools for mounting CLD1 on wall etc.

### Location

**The amplifier should be mounted where:**

- It is in close proximity to the loop.
- it is protected from drips or sprays of water.
- it is not vulnerable to mechanical damage.
- the controls can be accessed during set-up.
- the cables will not be inadvertently caught or pulled out from the unit.
- any heat generated during normal operation can escape.
- The induction loop itself is a critical to correct system performance, either:
- Unfold the loop coil and fit vertically inside the front panel of the counter using the adhesive fixings provided. The top of the loop coil should ideally be at a height of 900mm to 1000mm above the floor. See diagram in Quick start. 2 2
- To cover a larger area, a perimeter loop using 0.5mm to 1.5mm crosssection wire or equivalent. Return the feed to the amplifier with a twisted pair

Please consult Ampetronic if you need more advice about the loop design.

## Connections

**LOOP: Connect the loop cable to the 'LOOP OUTPUT' socket.**

1. To open the spring clamp terminal – insert a flat bladed screwdriver into the small “tab” above the hole. Push gently until the hole opens.
2. Insert the wire (remove 7mm of insulation from end).
3. Remove the screwdriver – clamping the wire in place.

**INPUTS:** Both inputs are 3.5mm two pole (mono) jack sockets. They will not interface directly to any stereo signal source. Connect inputs as shown in the connection details. INPUT 1 Unbalanced electret microphone only. INPUT 2 Microphone as INPUT 1, or Line level input. Note: Set the 'INPUT 2 SELECT' switch to the appropriate position for the type of signal source used. DC POWER: The 'DC IN' socket accepts 12V . Connect the 12V power DC DC supply provided to a convenient AC power socket.

## TROUBLESHOOTING

For correct operation, with input signal(s), you should have the following LEDs illuminated:

POWER' (Green)

'INPUT SIGNAL' (Green) only whilst audio signal is applied to an input

'LOOP CURRENT' (Yellow) only at peaks of audio signal

### Power LED not illuminated

**No 12V power to unit** – Check cable has not been unintentionally disconnected. DC

**No external AC power** – Check cable has not been unintentionally disconnected. Ensure external AC power supply is switched ON.

**Internal Fuse Blown** – Disconnect from supply and fit a correctly rated replacement. See **SAFETY** clause 4

### INPUT SIGNAL LED not illuminated at any time

**No inputs connected** – Connect an input as described in **INSTALLATION**.

**'INPUT' control too low** – Adjust control as appropriate see: **OPERATION**.

**Input signal level too low** – Check that signal level is the correct level for the chosen input see: **TECHNICAL SPECIFICATIONS**

### 'LOOP CURRENT' LED not illuminated (even at peaks of signal)

**Loop not connected or open circuit** – Check loop continuity using a resistance meter.

**'INPUT SIGNAL' LED not illuminated** – See above.

**'LOOP CURRENT' control too low** – Adjust control as appropriate see: **OPERATION**.

### Low or no field received in the loop area

If 'LOOP CURRENT' LED is illuminated, but no field is received in the loop area, either:  
the loop is installed in the wrong place, or there is a short circuit between the ends of the feed cable.

If 'LOOP CURRENT' LED is illuminated, but there is only a very low or dull field strength.  
there is significant metal in the desk / counter near the loop consult Ampetronic.

If 'LOOP CURRENT' LED is not illuminated – See above.

## TECHNICAL SPECIFICATIONS

### CLD1 Power Supply: Frequency Response:

**Supply range:** 12-15V0c

**Nominal voltage:** 12V0c

**Fuse:** T 1.6A L

**Supply currents (with nominal voltage):**

**Nominal** (pink noise): 600mA

**Quiescent:** 55mA

**Maximum:** 1.0A

**'DC IN' terminal:**

Centre positive ( + ) concentric socket.

Ø = 5.5mm/2.1mm.

### 12V0c Power Adaptor Supply (AC):

Refer to markings on unit supplied. Must be capable of delivering 1.0A from 12V0c output.

### Audio signal inputs:

2-pole 3.5mm Jack sockets

### INPUT 1:

**Input Impedance:** 8.5k

**Sensitivity:** -60dBu (775uVrms)

**Overload:** -13dBu (173mVrms)

Microphone cables must be  $\leq 3\text{m}$

### INPUT 2:

**Line** – Mic mode selectable with switch.

**'Mic'** mode: same as Input 1

**'Line' mode:**

**Input Impedance:** 820k

**Sensitivity:** -20dBu (77.5mVrms)

**Overload:** +20dBu (7.75Vrms)

**Note:** This input is not isolated.

### Compression (AGC):

40dB dynamic range Controlled by adjusting input level. Attack and decay time constants optimized for speech.

### Loop Design:

Standard loop coil {supplied} or perimeter loop. See 'Designing Induction Loops Handbook' for details. Consult Ampetronic for advice.

### Loop Output:

**Current:**  $>2.4\text{ARms}$  or  $3.4\text{Apk}$  @ 1 kHz



**Voltage:** >3.2VRMs or 4.5Vpk@ 1 kHz

**Loop Resistance:** 0.3 to 1.0

**Loop Impedance:** 1.3 max@ 1.6kHz. Spring terminal connections accept stranded or single core wire.

**Acceptable wire gauge:**

**CSA:** 0.5 to 1.5mm<sup>2</sup>

**AWG:** 22 to 16.

**Frequency Response:**

80Hz – 5.0kHz ±1.SdB, at low level measured as loop current with no MLC.

**MLC (Metal Loss Correction):**

0dB to 4d8 per octave boost. Fully anticlockwise – flat response.

**Environmental:**

**Ambient temperature:** -20°C to +50°C

**IP rating:** Ip20.

**Physical:**

**Weight:** 280g

**Width:** 127mm

**Height:** 35mm

**Depth:** 75mm

**Standards:** Meets relevant CE, EMC and safety standards. IEC 60118-4 AFILS Please contact Ampetronic if you need further assistance.

**WARRANTY**

This product carries a five year parts and labour warranty from date of shipment from Ampetronic. To qualify for the five year warranty, the product must be registered at [www.ampetronic.com](http://www.ampetronic.com) (products/warranty), without which the warranty will be valid for two years only. The warranty could be invalidated if the instructions in this handbook are not followed correctly, or if the unit is misused in any way

**Note:** The power adapter supplied with this product is only covered by the manufacturers warranty period.

**DECLARATION OF CONFORMITY**

**Manufacturer:** Ampetronic Ltd., Unit 2, Trentside Business Village Farndon Road Newark NG24 4XB

**Declares that the product:**

**Description:** Induction Loop Driver Type name: CLD1

**conforms to the following directive(s and Norm(s):**

**2014 / 35 / EU** The Low Voltage Directive (LVD) and its amending directives

**2014 / 30 / EU** The Electromagnetic Compatibility Directive (EMC) and its amending directives

**2014 / 53 / EU** The Radio Equipment Directive (RED) and its amending directives

**2011 / 65 / EU** The RoHS Directive and its amending directives

and its amending directives

**I hereby declare that the equipment named above has been designed to comply to with the relevant**

**sections of the above specifications. The unit complies with all essential requirements of the Directives.**

## Documents / Resources

[illegible]