

# CLD1 INSTALLATION HANDBOOK

## Handbook Contents

- Safety
- Introduction
- Quick Start
- Installation
- Troubleshooting
- Technical Specification
- Warranty
- Declaration Of Conformity

## Box Contents

- 1 x CLD1
- 1 x AC to 12V<sub>DC</sub> power adapter
- 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.



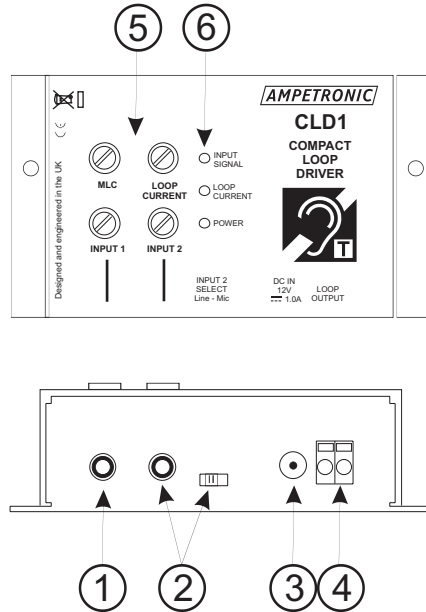
**WARNING:** Do not expose to dripping or splashing.

7. Clean only with a dry cloth.

## INTRODUCTION

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

The unit is designed to drive the standard multi-turn loop coil (if supplied), or a small area perimeter loop up to an area of 40m<sup>2</sup>. Consult designing induction loops handbook for more details.

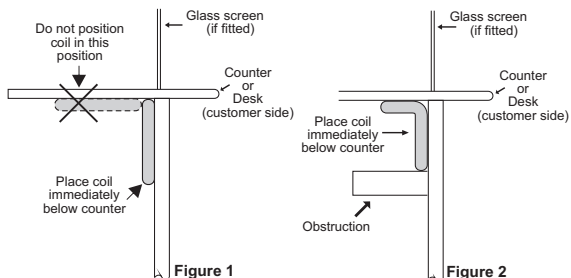


The CLD1 features include:

- ① Microphone input - for use with unbalanced electret microphones.
- ② Selectable microphone or unbalanced line level input. (Mic' mode as above)
- ③ 12V<sub>DC</sub> input - suitable AC power adapter supplied.
- 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 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 800mm above the floor.

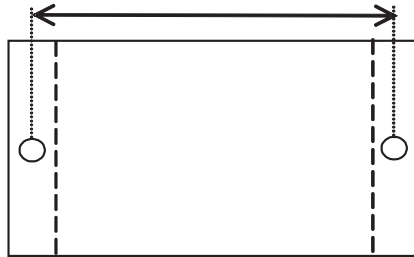


- If a perimeter loop is to be used, the feed wires to the amplifier should be twisted together. See 'Designing Induction Loops handbook' for details.
3. Connect the loop wires to 'LOOP OUTPUT' terminals. Polarity is not important. To open the spring clamp terminal - insert a flat bladed screwdriver 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<sub>DC</sub> adapter to 'DC IN' socket on the unit. Connect adapter to AC 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.

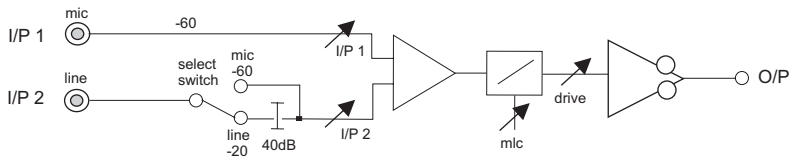
*Note: Once the 'LOOP CURRENT' control is set, do not adjust it again.*

## MOUNTING DETAILS

Fixing hole centres 117mm apart



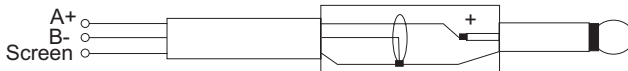
## BLOCK DIAGRAM



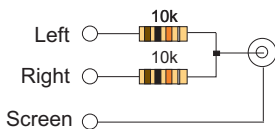
## CONNECTION (LINE LEVEL INPUT)

### Balanced Input

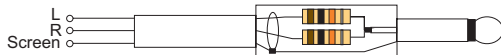
Connect screen and -ve signal lead together



### Stereo Source



Ideally fit the two 10k, 1/4W, 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 800mm above the floor. See diagram in Quick start.
  - To cover a larger area, a perimeter loop using 0.5mm<sup>2</sup> to 1.5mm<sup>2</sup> cross-section wire or equivalent. Return the feed to the amplifier with a twisted pair. Refer to 'Designing Induction Loops handbook' for details.

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<sub>DC</sub>. Connect the 12V<sub>DC</sub> power 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<sub>DC</sub> power to unit -  
No external AC power -

Check cable has not been unintentionally disconnected.  
Check cable has not been unintentionally disconnected.  
Ensure external AC power supply is switched ON.  
Disconnect from supply and fit a correctly rated replacement. See **SAFETY** clause 4.

Internal Fuse Blown -

### INPUT SIGNAL LED not illuminated at any time

No inputs connected -  
'INPUT' control too low -  
Input signal level too low -

Connect an input as described in **INSTALLATION**.  
Adjust control as appropriate see: **OPERATION**.  
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:

Supply range: 12-15V<sub>DC</sub>  
Nominal voltage: 12V<sub>DC</sub>  
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.

### 12V<sub>DC</sub> Power Adaptor Supply (AC):

Refer to markings on unit supplied.  
Must be capable of delivering 1.0A from  
12V<sub>DC</sub> output.

### Audio signal inputs:

2-pole 3.5mm Jack sockets

#### INPUT 1:

Input Impedance: 8.5kΩ  
Sensitivity: -60dBu (775uV<sub>rms</sub>)  
Overload: -13dBu (173mV<sub>rms</sub>)  
Microphone cables must be ≤ 3m

#### INPUT 2:

Line - Mic mode selectable with switch.

'Mic' mode: same as Input 1

'Line' mode:

Input Impedance: 820kΩ  
Sensitivity: -20dBu (77.5mV<sub>rms</sub>)  
Overload: +20dBu (7.75V<sub>rms</sub>)

*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: >2.4A<sub>RMS</sub> or 3.4A<sub>pk</sub> @ 1kHz  
Voltage: >3.2V<sub>RMS</sub> or 4.5V<sub>pk</sub> @ 1kHz  
Loop Resistance: 0.3Ω to 1.0Ω  
Loop Impedance: 1.3Ω 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 ±1.5dB, at low level  
measured as loop current with no MLC.

### MLC (Metal Loss Correction):

0dB to 4dB 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.co](http://www.ampetronic.co) (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

**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.**

Date: June 2019  
J.R. Pieters  
Managing Director  
Ampetronic Ltd.