

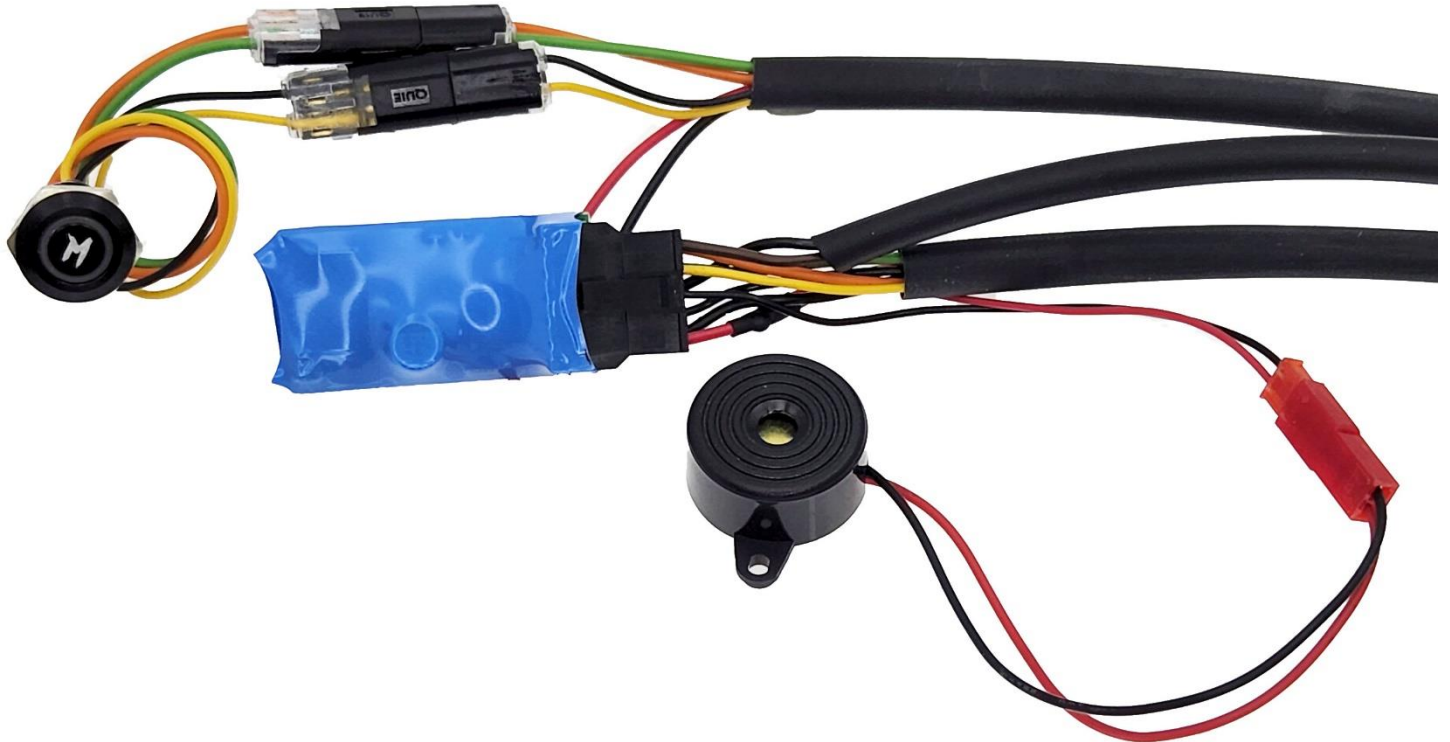


# CLD3

## Coolant Level Detector 3

Users Manual – English 1.00

[www.MadmanDevelopments.com](http://www.MadmanDevelopments.com)



## Introduction

The CLD3 is a engine coolant level early warning system. It combines microprocessor technology and AC signal probe excitation to accurately determine the absence/presence of coolant level. The M-Button contains a 2-color LED to give a visual coolant level state as well as the control button to silence, mute or disable the system. An audio alarm is also provided. The CLD3 can use inexpensive probes such as stainless steel screws to determine the coolant level. The CLD3 can also be used with float level type sensors and additionally, It features a failsafe input circuit.

## Features

- Coolant level early warning system
- The M-Button uses a Bi-Color Ring LED indication to determine the state of the coolant level
- AC probe excitation which eliminates corrosion/dissolving of the probes as with DC excitation.
- Fail safe circuit design.
- A 5 second coolant level delay time is given before the alarm is activated. This eliminates false triggering of the alarm due to off-road conditions or cornering.
- The M-Button incorporates a reset switch to acknowledge alarm
- Buzzer sound override to disable the buzzer sound.
- Override function to disable the unit until reboot.
- Microprocessor controlled circuit
- On board voltage reversal and over voltage protection for harsh vehicle environments
- Can be used on 12V or 24V vehicles
- Float level type sensors also supported.
- 1 year limited warranty

# 1 Installation

Connect the CLD3 unit as indicated in the following diagram.

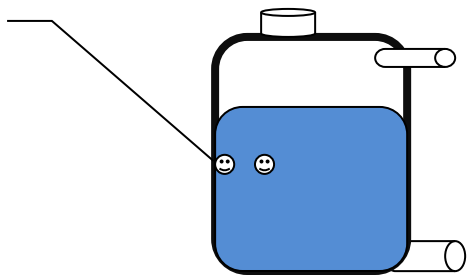
## Mounting the Level Sensor:

There are two basic methods of sensing the coolant level, either with the included self tapping screws screwed into the coolant bottle or by using a separately supplied level sensing plug.

### Self Tapping Screws Option:

Place screws +/-25mm below the normal water level or on the recommended minimum mark. Screws must be horizontal and 25mm apart.

Drill 1.5 to 2mm holes for the 4.2mm Screws



### Level Sensing Plugs:



These plugs are available in different thread sizes to suit coolant plugs or bleed screws originally fitted to engines. 1/2BSP, M6x1, M10x1, M12x1.5, others on request.

**Currently to suit Land Rover Tdi, Td5, V8 and Discovery 3 and 4 / LR3**

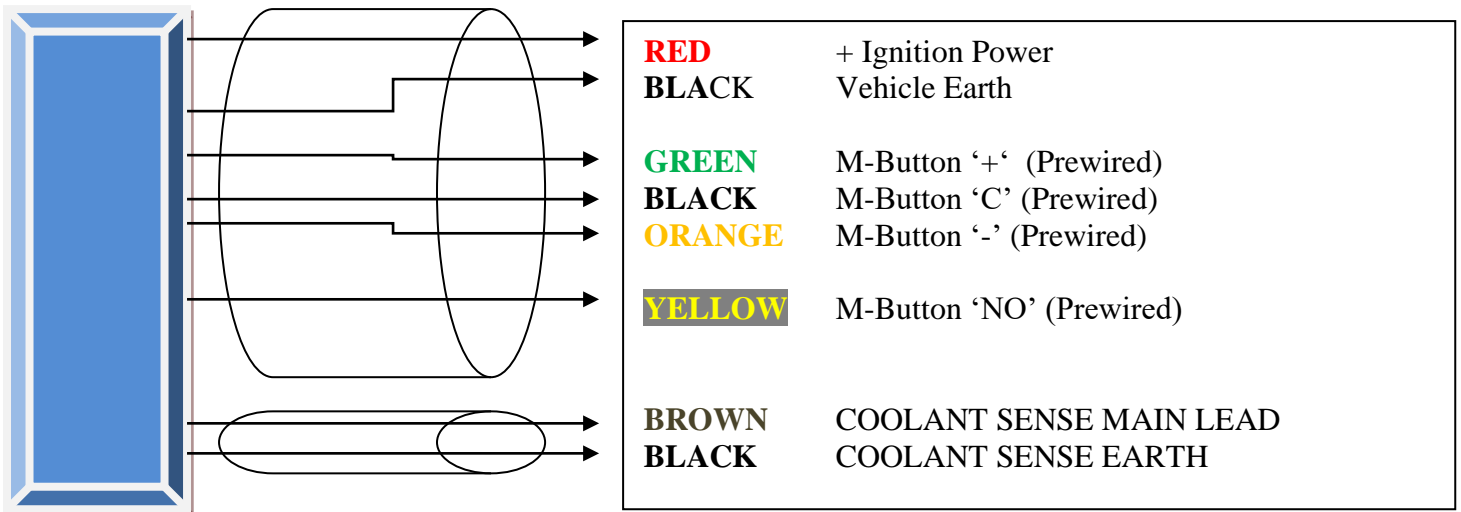
## Mounting of the M-Button:

The CLD3 features one single user interface called 'The M-Button' which is a has a bi-coloured LES and push button integrated into one element. This gives a sleek and neat appearance to the system which is at home on any dashboard or control panel.

The M-Button requires a 12mm hole to be drilled in a panel no thicker than 6mm. The M-Button is fitted with connectors to ease installation. The LED holder requires a neat 8mm hole in a panel. The M-Button is supplied with an O-Ring for waterproof installations and can be fitted under the switch bezel if required. Fit the connector through the hole, then slide the nut over the connector and screw the nut onto the button thread firmly. Push the connectors together according to the wire colours.



**Wiring:**



**Red:** 8 to 30Vdc (switched power), Use the cable joiner to Tee into a positive ignition wire.

**Black:** Ground (-ve) – Use the 6/8 mm round lug to earth the wire where suitable.

**Yellow/Black & Green/Orange in Symmetrical Plugs:** 2 x 2 way plugs. 1 for Reset Switch, 1 for LEDs

**Sleeved and Twisted Brown/Black – Brown:** Coolant level tank high probe, **Black:** Coolant level tank low probe.

If you are using a level sensing plug, fit the **Brown** wire to the tag on the plug and the **Black** wire to the engine block as near as is possible to the level sensing plug.



**LED indication:**

Green: Coolant level ok

Flashing Red: Coolant level alarm (Not yet acknowledge by the reset switch)

Solid Red: Coolant level alarm (Acknowledged by the reset switch)

Flashing Green / Red: Override – Unit is disabled completely and is NOT monitoring coolant level.

**Turning the sound on or off:**

Press and hold the reset switch for 2 seconds as power is applied to the unit. The unit will enable or disable the audio warning beep. The LED will be orange for 5 seconds when in the audio on/off mode. The CLD3 will remember this setting until changed. The CLD3 will emit a short beep if the sound is enabled.

**TOTAL OVERRIDE:**

Press and hold the reset switch for 5 seconds as power is applied to the unit. The unit will flash the led RED/GREEN while in override mode. The CLD3 will remember this setting until changed.

## 2 Specifications

<b>Operating Temperature Range</b>	-10°C to 60°C (14°F to 122°F)
<b>Storage Temperature Range</b>	-20°C to 80°C (-4°F to 176°F)
<b>Humidity</b>	<85% non-condensing
<b>Power Supply</b>	8 to 30VDC Linear power supply with built in 33V over voltage and reverse voltage protection
<b>Current Consumption</b>	approx. 10mA (depending on alarm mode)
<b>Visual indication</b>	Bi-Color Ring LED (Red/Green)
<b>Audio Indication</b>	External Piezo Buzzer
<b>Probe excitation</b>	2.5KHz AC signal
<b>Non-volatile memory storage</b>	1000000 write cycles

## 3 Warranty

This product carries a warranty for a period of one year from date of purchase against faulty workmanship or defective materials, provided there is no evidence of misuse or evidence that the unit has been mishandled. Warranty is limited to the replacement of faulty components and includes the cost of labour. Shipping costs are for the account of the purchaser.

**Note:** Product warranty excludes damages caused by unprotected, unsuitable or incorrectly wired electrical supplies and or sensors, and damage caused by inductive loads or moisture.

## 4 Disclaimer

Operation of this instrument is the sole responsibility of the purchaser of the unit. The user must make themselves familiar with the operation of this instrument and the effect of any possible failure or malfunction.

The manufacturer reserves the right to alter any specification without notice