CLD

Coolant Level Detector

Operating Manual – English 1.02

Introduction

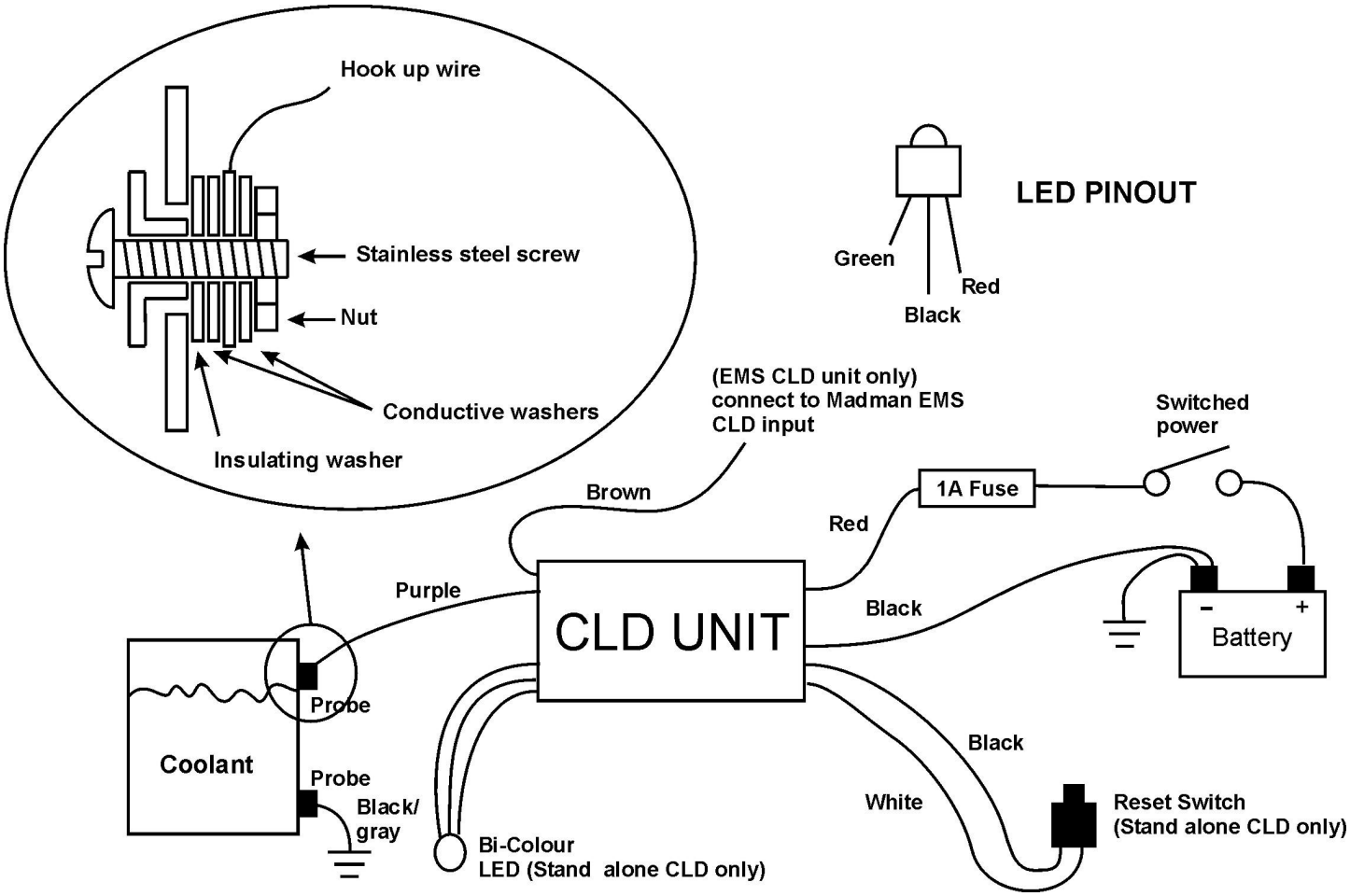
The CLD is a radiator coolant level early warning system. It combines microprocessor technology and AC signal probe excitation to accurately determine the absence/presence of coolant level. A LED visual coolant level state as well as an audio alarm is given. The CLD can use inexpensive probes such as stainless steel screws to determine the coolant level. It also features a failsafe input circuit. The CLD can also be used with float level type sensors.

Features

- **Coolant level early warning system**
- **Bi-Color LED indication to determine the state of the coolant level (Stand alone unit only)**
- **AC probe excitation which eliminates corrosion/dissolving of the probes as with DC excitation.**
- **Fail safe circuit design.**
- **A 5 second coolant level “debounce” time is given before the alarm is activated. This eliminates false triggering of the alarm**
- **Audio alarm sound can be turned on/off**
- **Reset switch to acknowledge alarm (Stand alone unit only)**
- **External alarm contact output (EMS CLD unit only)**
- **Easy connection to the MADMAN range of EMS products to utilize the EMS built in coolant level warning messages**
- **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 CLD unit as indicated in the following diagram. Use of an external 1A fuse is recommended. Apply a sealing compound to the external contacts of the probes to protect the hookup wire and to prevent leaks.



Wiring:

Red/Black – **Red:** 8 to 30Vdc (switched power), **Black:** Ground (-ve).
Twisted Purple/Black,Gray – **Purple:** Coolant level tank high probe, **Black,Gray:** Coolant level tank low probe.
Twisted White/Black – Reset switch (Stand alone CLD only).
Twisted Green/Orange/Black – **Green:** Bi-Color LED Green, **Orange:** Bi-Color LED Red, **Black:** Ground (-ve) (Stand alone CLD only).
Brown – Connect to Madman EMS coolant level detector input (EMS CLD only).

LED indication (Stand alone CLD only):

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)

Turning the sound on or off (Stand alone CLD only):

Press and hold the reset switch for 5 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 CLD will remember this setting until changed. The CLD will emit a short beep if the sound is enabled.

External alarm contact output (EMS CLD only):

The CLD external alarm contact utilizes an open collector transistor output. This output will be connected to ground (-ve) when the coolant level is ok and floating if there is an absence of coolant. Maximum current through the alarm output should not exceed 50mA. This output can be connected directly to the MADMAN EMS coolant level sensor input.

2 Specifications

Operating Temperature Range	-10ºC to 60ºC (14ºF to 122ºF)
Storage Temperature Range	-20ºC to 80ºC (-4ºF to 176ºF)
Humidity	<85% non-condensing
Power Supply	8 to 30VDC Linear power supply with built in 33V over voltage and reverse voltage protection
Current Consumption	approx. 10mA (depending on alarm mode)
Visual indication	Bi-Color LED (Red/Green)
Audio Indication	Piezo element
Probe excitation	2.5KHz AC signal
Alarm Contact	Transistor open collector, Max current = 50mA
Non-volatile memory storage	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.

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

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